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Contributions.

The Union Electric Signal System.

II.

BY THOMAS F. KRAJEWSKI, M. E.

(Continued from page 141.)

FORMS OF SIGNALS.

Although the inventors desired to preserve uniformity of signals on the different railroads which introduce their system, they could not maintain this feature. They have at present the following forms of signals: The open signal, or the disc semaphore (fig. 5); the closed or color signal (fig. 7); and a signal (fig. 8) which resembles the switch signal of the Pennsylvania railroad.

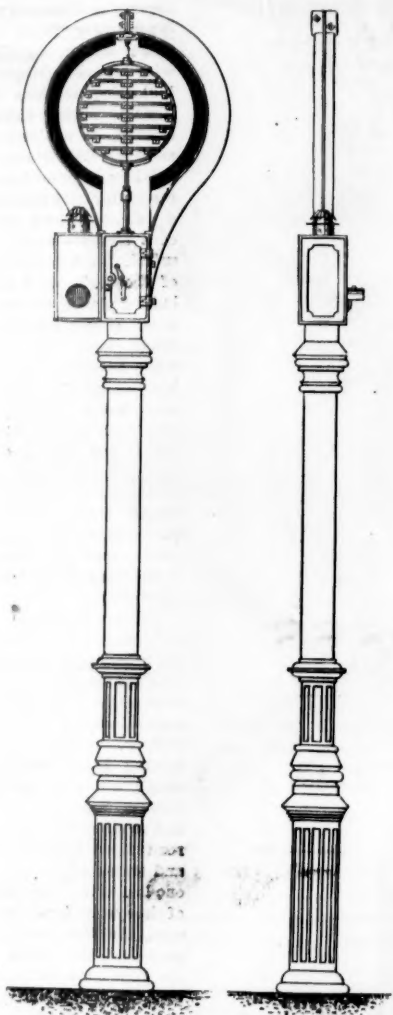


Fig. 5.

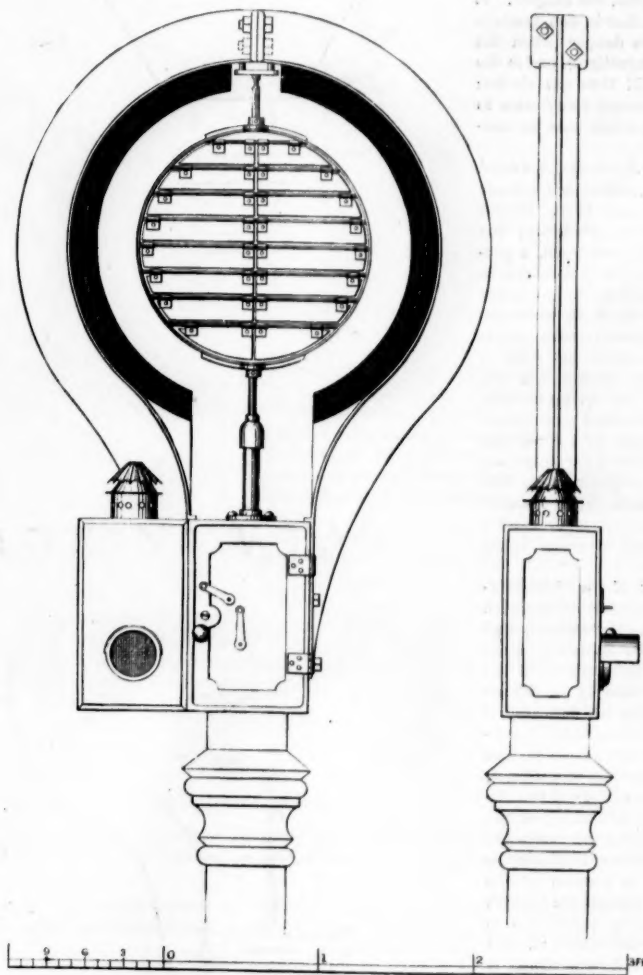


Fig. 6.

UNION ELECTRIC SIGNAL SYSTEM.

The first is represented in fig. 5. In fig. 6 it is shown without the column, and on a larger scale, in both elevations. It consists of a neatly designed cast-iron column (fig. 5), on the top of which is an iron box containing the apparatus, and above it, attached to a vertical shaft, is the disc. The latter is surrounded with an iron ring—an air space being left between the disc and the ring—which is fastened to the box, and which also serves as a bracket to the shaft. To diminish the pressure of the wind, the disc is composed of slats, hinged so as to swing slightly under pressure. The box containing the apparatus has a double door provided with a lock. The key-hole is protected by a spring plate, to prevent dampness from entering through it. With these precautions the apparatus can always be kept in the best condition. The disc, the column and the box are painted white, and the outside ring is also white on its outer portion and black on the inner, to be more conspicuous. The safety position of the signal is when the disc faces the train or is at right angles to the track, and the danger position is when the disc stands parallel to the track and is seen edge-wise from the train. The night signal is given by the red or white light of the lamp which is attached on the side of the box, as shown in the engraving, a red banner being placed inside of the lamp casing, which receives its motion by a transmission from the shaft of the disc.* In the dan-

* It is the intention of the company to place this lamp, hereafter, on the top of the vertical shaft.

ger position the banner is placed in front of the lamp, and is visible through the round aperture in the casing, which is covered with glass, and in the safety position is withdrawn to the side.

The form of this signal being in some respects new, it may be subjected to criticism. Certainly the white color is more easily distinguishable on a surrounding dark background than any other color. But it is essential that the background should be dark, and, if possible, black, for should the white signal stand against snow or a building painted white, it could not be easily distinguished. If a board painted black were placed behind the signal, as a background, a white signal would then be superior to others. It is the object of the Union Electric Signal Company to make use of such black boards in places where the necessity of doing this may exist.

Signals of this form are used on the Fitchburg Railroad, in connection with the Union signal system, and they are highly spoken of. The fixed, outside ring of the signal is seen first, and then the eyes direct themselves toward the centre—the place where the signal actually is, instead of wandering about, and the dark ring (the space between the outside ring

semaphore signal,* which, as almost universally agreed, is the best form of a railroad signal. It would be premature to publish its design at present, but it can be mentioned that the mechanism which operates it is no more complicated than that of a disc signal.

THE APPARATUS.

by means of which the signals are moved and their positions controlled by electric currents, are electro-mechanical contrivances. The moving power is given by means of a falling weight or of a coiled spring, which mechanism, resembling that of "clock work," is too generally known to require any description. The force of gravitation is applied to all "open signals" (for the pressure of the wind increases the resistance), and the force of a spring suffices for the "closed signals." The controlling, or the electric, portion of the machine differs but slightly in the two kinds of appliances.

Fig. 9 represents the spring apparatus. It consists of two metallic plates connected by columns, which form a support for the different parts of the apparatus. The moving mechanism is placed between the two plates. The spring is wound on the shaft G, from which the power is transmitted

and the disc) with the white disc in the centre, if the signal is at safety, or a full, dark centre ground, if the signal is at danger, are easily discerned. The Fitchburg Railroad Company, which alone has practically tested the efficiency of this signal, even went so far as to discard altogether the lamp for a night signal, as with the locomotive head-light the day signals can be readily distinguished at a sufficient distance.

The closed signal is represented in two elevations in fig. 7. It consists of a water-tight box, placed on a column. The signal apparatus is placed inside, on the floor of the box. The front and back sides of the box have circular glass windows through which a red banner or no banner is visible. These constitute the danger and the safety signal. The banner is circular and revolves around a vertical axis which passes through its centre. A lamp is attached outside of the back window, which is lighted for the night. Should it be necessary for the signal to be visible from both sides, two vertical banners are used, which are attached to the ends of a horizontal rod, which is in its centre fastened to the revolving, vertical shaft. The lamp is then placed between the banners.

The third signal, shown in fig. 8, will be easily understood without description, it being like the well-known switch signal with two targets, white and red, which, to be more conspicuous, are made of a different shape. The lamp revolves with the shaft.

The Union Signal Company is at present constructing a

through pinions to the shaft E, which carries the revolving signal banner, as shown. The controlling mechanism is placed on the top of the upper plate. This consists of a lever, B, pivoted on a shaft, a, which carries at the one end an armature of the electro-magnet, A. A spring, S, presses the other end of the lever, B, down, so as to lift the armature from the electro-magnet instantaneously with the breaking or shifting of the electric current which excited the magnet. The lever B has at its end (which is pressed by the spring), two pins, which act alternately as stops to a detent, D, which latter controls the position of the signal shaft. Before the action of these arrangements can be explained, it must be observed that the shaft, E, has attached to it four arms—a, a', b and b', each of which has near its extremity a short pin projecting downward. In the diagram fig. 10, is shown, separately, the detent D, the end of the lever B, with the stops c and c', and the pin d (of a triangular shape), of the arm a'. The detent D, is pivoted at f, and has at e a piece projecting upward, against which the pin d is shown to abut. If the pin d should move in the direction of the dart, it would swing the detent into the position D'. provided that the stop c would not hold the latter fixed. Now, the stop c is either raised or lowered, according to the position of the lever B, which is controlled by the elec-

* A signal which consists of a post, to the top of which is attached an arm. The position of the arm, whether horizontal or inclined, indicates danger or safety.

tro-magnet. If the magnet is excited, the stop *c* is raised, and in this position it does not touch the end of the detent, which, consequently, will swing to *D'*, and allow the pin *d* to pass. As the latter is, by means of the arm *a'*, rigidly connected with the signal shaft, the latter is thus held in a fixed position until the electro-magnet has attracted the armature of the lever *B*, when it begins to revolve. But before a quarter of a revolution has been made, another pin, which is carried by the arm *b*, comes in contact with the projecting piece *e* of the detent, but now on the other side of the pivot, and swings the detent back into the *D* position, in which the stop *c'* arrests its further motion. Should now the electro-magnet be demagnetized, the stop *c'* would fall down sufficiently to admit the detent to swing in to the *D'* position, and the shaft would consequently make a second quarter of the revolution. The pin of the arm *a* would next come in contact with the detent moving back to *D*, and stop the shaft. The first operation is then again repeated, and so on. The signal shaft moves thus only a quarter of a revolution every time, when the electric current is suddenly closed on, or cut off from, the magnet. It may be added that in one position the signal shows danger (when the magnet is demagnetized), and in the other safety. If thus the electric current would cease for any cause to act, the signal would take the danger position.

The spring of the shaft *G* is wound up once a week, although it is made to run for a longer time. In case this should be neglected, and the spring allowed to run down, a provision is made to stop the signal in the danger position. This consists of a shaft *I* (see fig. 9), to which are fixed two horizontal rods; one is shown at *H*, the other (not seen in the cut) presses against the coil spring. When the spring uncoils, it moves the horizontal rods around their common axis until finally the hooked end of the rod *H* catches one of the upward projecting pins that are fastened to the arms *b* and *b'* and stops the shaft *E* from revolving further, fixing the signal in the danger position.

The apparatus of the distant signal is exactly the same as that of a home signal, here represented, and the position of the former is made dependent on the position of the lever *B* of the latter by the following arrangement: A bracket, *C* (see fig. 9), is attached to the frame-plate, but is insulated from it, and is connected to the end of a wire, *n*, which runs to the battery of the distant signal; another end, *n'*, of the same wire is connected with the frame-plate, as shown. When the lever *B* is held in position by the magnet, its end touches the bracket *C*, and an electric connection is made between wires *n* and *n'*, and the circuit of the distant signal is then closed. (The current passes from *n'* through the frame-plate, shaft *x*, lever *B* and the bracket *C* to *n*.) The magnets of the home and distant signals are thus either excited or not, simultaneously.

There is another circuit-closer shown at *F*, which consists of two metallic spring plates, insulated from each other and from the frame-plate. They connect with the ends *m*, *m'*, of a wire of an electric circuit, which acts either on a third signal, or on a bell, or on a locking magnet of a switch. When the shaft *E* is in a position in which the magnet attracts the armature of the lever *B*, one of the two long pins which project downward, and are attached to the arms *b* and *b'* of the shaft *E*, causes the two plates of the circuit-closer *F* to come in contact. A piece of insulating material is attached to one plate, to prevent electric connection with the pin.

In a similar manner more circuit-closers could be attached to the same apparatus.

APPLICATION TO BLOCK SYSTEM.

From what has been already said, it is apparent that the Union electric signal system is, in its fundamental principle a block system—as the road has to be divided into sections the condition of which, whether free or occupied, is indicated by the signals. In the diagram, fig. 11, is shown the application of this system of signals to a double track railroad. *A*, *B*, *C*, *D* and *E* are the consecutive sections of

the "up" track, and *K*, *L*, *M*, *N* and *O*, of the "down" track. The directions in which the trains run are indicated by darts. At the entrance to each section are placed two signals marked differently for distinction (in the diagram, one is shown dark, the other white). Disregarding for the moment the dark signals, we observe that the signals shown in white and marked *b*, *c*, *d*, *e*, and *l*, *m*, *n*, *o*, belong each to a section marked with corresponding capital letters. Each of these signals is placed 150 feet farther from the beginning of a section, so that if a train enters on a section the

ported at the nearest station, and the signal restored to order.

Such a case should not be considered as a failure of the signal, for, on the contrary, it is the signal which makes the fact of a derangement known, and its condition is then that of a warning.

As the train moves from section to section and finds the signals at safety and turning promptly to danger on its approach, it continues the journey undisturbed, at its usual rate of speed. But if a signal is found at danger on the approach to a new section, it means that the section is already blocked by another train. The train then, according to the instructions, either stops waiting for a safety signal, or proceeds with caution, ready to stop at the sight of any danger, until it reaches a new section.

The signals shown dark in the diagram, fig. 11, are the distant signals, indicating the condition for a section ahead, namely *c'*, is the distant signal for the section *C*, and moves simultaneously with, but independently from, the signal *c*. Other distant signals are marked with letters corresponding to those indicating sections and the home signals. Distant signals, being cautionary, do not stop trains. They are made distinct from the home signals by a different form or color. The reason for not placing the distant signal somewhere about the centre of a section—which would give a sufficient distance in which the speed of the train could be controlled—but for placing it a whole section behind, is the following: A train might have just left a section, while another train entered it seeing the signal at safety, and if, for any cause that may happen, the first train moved back on the section it just left, a collision might occur, there being now no signal which would indicate danger to the second train, it having already passed the signal which showed the condition of this section, and which at the moment of its passage indicated safety.

This can never occur if the signals are placed as shown on the diagram, for arriving on a new section the engine-runner knows the condition of both sections ahead of him at once, and one of the signals would show danger. Another reason for maintaining this order is, that on a single track—as will be shown—this arrangement is necessary,* and almost all double-track railroad have single-track branches, and trains might be running from one line to the other, the uniformity of the system tends to avoid confusion. As the distant signals are placed at the points which divide the road into sections, they are at the same time marking posts for the sections. A train should not pass that point if a home signal is at danger, as otherwise the signal would be held at danger by the presence of this train. This rule must be maintained only when the absolute block system is in order.

The Fitchburg Railroad Company, which has a portion of its double-track road equipped with these signals, uses but one—home—signal for each section. The necessity for adopting distant signals so far has not been demonstrated by experience. It is, however, an indisputable fact that no portion of a track can be absolutely safe unless protected by a distant signal, and yet the occasions in which a distant signal for a straight, unbroken track section can prove its usefulness might be so rare as

not to warrant the extra expense of its erection. There are, however, on every road places which are especially dangerous—like junctions, draw-bridges, tunnels, curves in cuts, or some stations—where the distant signals may be required.

The Fitchburg Railroad Company works its traffic on the 'permissive block system,' using thus the danger signal as a caution only. The trains do not stop at the sight of a danger signal, but proceed cautiously.

The question as to whether the absolute or the permissive block system is more advantageous is in one sense related to

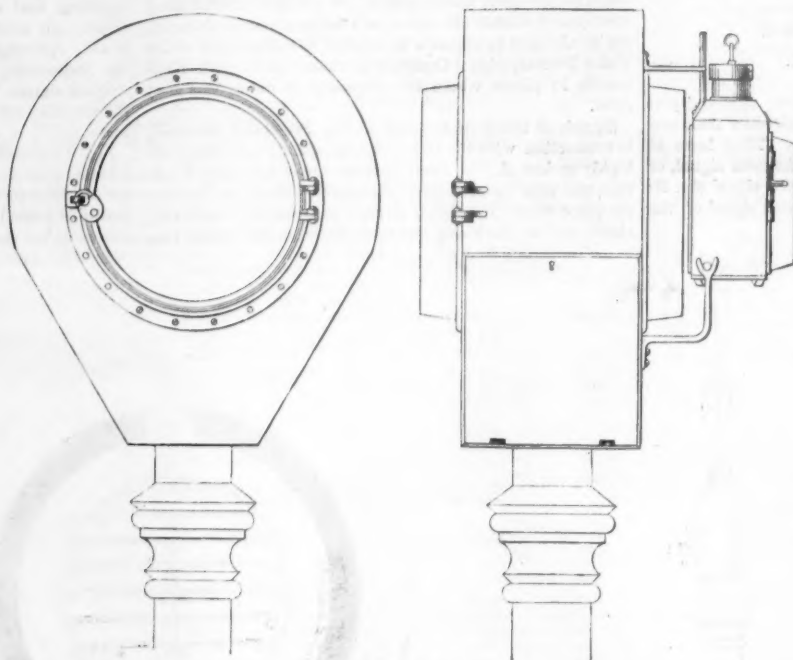


Fig. 7.

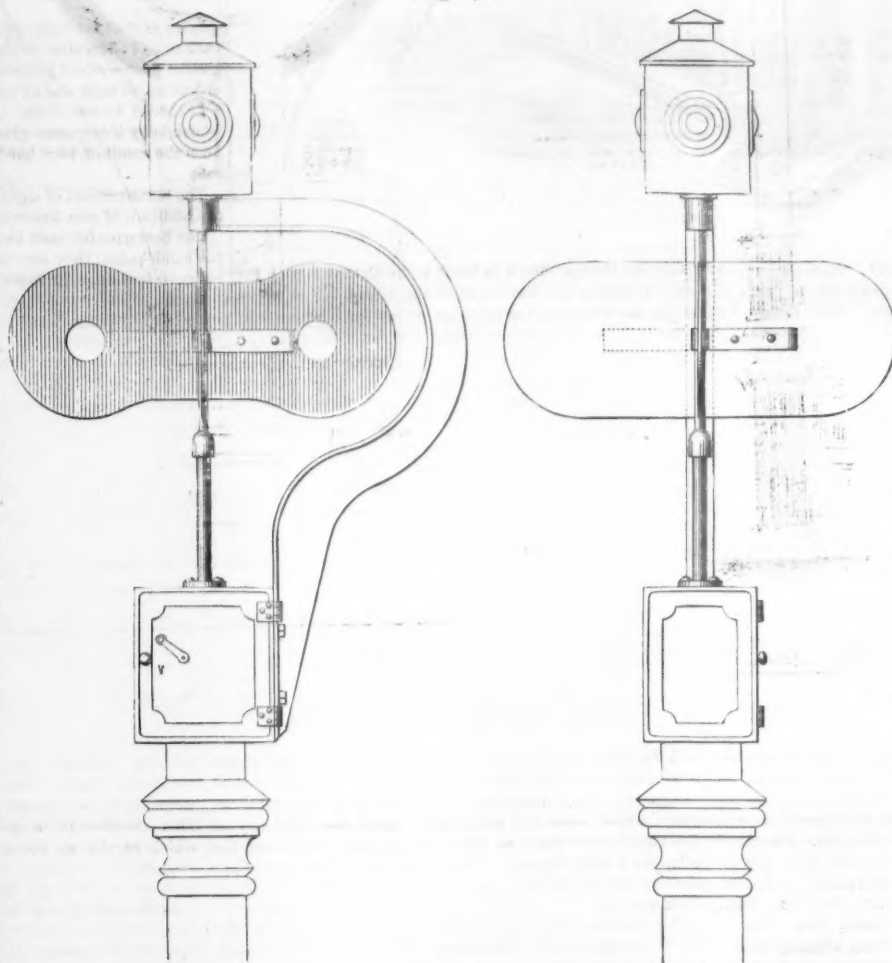


Fig. 8.
UNION ELECTRIC SIGNAL SYSTEM.

locomotive runner sees the signal move from safety to danger.

The object of this arrangement is to make the engine-runner confide in the protection that these signals are giving him. It serves also as an extraordinary precaution against a case—which, however, may never happen, and is experience so far has not yet happened—of the breaking of the spring or the weight which revolves the signal. If this break should occur while the signal stood at safety, it would remain so, even after a train had entered the section. But as it would not move in the face of the engine-runner, he would know that something was wrong with the apparatus, and, according to his instructions, would consider the signal as being at danger. The derangement would then be re-

* Since the above was written, it has been decided to place the two signals on one post, which will probably be the best arrangement. The same applies to the single as well as to the double-track road.



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THE CHICAGO & ALTON REPORT.

The Chicago & Alton Railroad was materially changed during the year 1879 by the completion of its Kansas City Extension, which was opened for business May 10. Reaching Kansas City did not affect it so much as the completion of a line under its own control between Kansas City and St. Louis. Between Kansas City and Chicago it has worked a line since 1871, but the Western 160 miles of it belonged to a St. Louis company, and though this may not have prevented the Chicago & Alton from cultivating Chicago business to the utmost by this route, it did prevent its doing any business whatever between Kansas City and St. Louis. Thus the change made during the year was the absolute ownership and control of its Chicago-Kansas City line, and the addition of a St. Louis-Kansas City line. Heretofore the shipments from Missouri River points have been as great to St. Louis as to Chicago, but there were but two roads to St. Louis against three to Chicago. In the division of business made after the railroad war of last summer, the Chicago & Alton was awarded a full one-third of the St. Louis freight; so that we may assume (not knowing in just what proportions the Chicago business was divided), that the Chicago & Alton has received twice as much freight from Kansas City by its own road as it had formerly from the St. Louis, Kansas City & Northern. It is true that the Chicago haul is some 50 per cent. longer than the St. Louis haul, but one-third of the St. Louis business is a business not to be despised; a very large number of roads, east as well as west, would be glad to get so large a through freight traffic.

But the advent of the new road was the signal for the dissolution of the Southwestern Association and the beginning of a railroad war that lasted five months, during which the large traffic of Missouri River points must have been carried at a loss. These are not very favorable circumstances for a new railroad. The Chicago & Alton's line must have lost money with the rest, but what it did very effectually was to demonstrate that it could do a large St. Louis business. It is reported to have carried more freight to St. Louis than any other road during the war, and when the Association was re-established, and the division of St. Louis traffic was left to arbitration, the arbitrators, as we have said, awarded it one-third of the business.

Thus though the new line was carrying a heavy traffic nearly eight months of the year, it was only about three and a half months that it could have been adding to the profits of the company. This makes the results of the year's business the more satisfactory, for in spite of this wasteful railroad war for five months the company shows an increase of 25½ per cent. in its net earnings for the year. The report says that 56½ per cent. of the total increase in gross earnings for the year came from this new line. This increase was \$1,084,158, 56½ per cent. of which is \$612,550 for 7½ months, or at the rate of \$957,000 per year, or \$5,886 per mile, which is a large amount indeed for an entirely new road, even if full rates were received, and indicates that the new line under anything like ordinary circumstances will pay 8 to 10 per cent. on its cost without taking into account any future growth of business.

The road was fortunately undertaken and completed while railroad construction was cheapest. It includes a great steel bridge across the Missouri which cost nearly half a million. Aside from this, the road, built with a solidity and permanency unusual in new roads in this country, with stone and iron bridges, and steel rails throughout, cost \$19,165 per mile (without equipment), and the cost of the whole, including bridges, discount on bonds, interest during construc-

tion, etc., was \$24,335 per mile. The yearly interest charge is about \$1,115 per mile, while on one of the St. Louis roads with which it competes it is \$1,900, and on the other about \$3,500. It can be supported, therefore, with a thin traffic.

It is not certain that it will always get so large a share of the St. Louis traffic as it has had hitherto since it was completed. The recent troubles of the Southwestern Association seem to have been caused by the feeling on the part of the other St. Louis roads that it had been awarded more than its fair share. The reorganization of the Association has already been effected, but a new division of traffic is to be made by arbitration, which will cover the business for some months back. But no change in the proportions is likely to affect this or any other road to the same extent as the five months' war of last year.

The average rate per mile received for freight by this road last year is the lowest, we believe, ever reported by a Chicago road, being 1.054 cents, and 18.8 per cent. less than in 1878. The Illinois Central's average rate in 1879 was 1.52 cents; the Chicago, Rock Island & Pacific's (year ending with March, 1879), 1.43 cents; the Chicago & Northwestern's, 1.56 cents. To work a road with a traffic no larger than Western roads have, so as to make a good profit out of a rate little more than a cent. per ton per mile, is not often possible; but the Chicago & Alton's working expenses last year were but 53 per cent. of its earnings. It has the advantage of cheap coal, but a large part of the progress made in reducing expenses is evidently due to the larger average train loads. There was a tremendous increase in these from 1878 to 1879—no less than one-sixth, from 138 to 161 tons, so that the increase of 62 per cent. in freight traffic was carried with an increase of only 38.7 per cent. in freight train mileage; yet the heavy trains of 1879 cost less than the light ones of 1878, the average expense per revenue train having fallen from 92.83 cents to 84.45 cents. The gain in train-loads is probably largely due to the use of more powerful locomotives. Still 145 out of 170 engines used in regular train service are four-driver or "American" locomotives, and but 25 have six drivers, partly, doubtless, acquired during the year, in which 27 engines were added to the stock. In its through traffic and in its large coal traffic there is no difficulty in getting trains of any size that any engine can haul, and it is here that heavy engines are especially advantageous.

As the opening of the new road in May, and the railroad war following it, made it impossible to judge of the change in the property by a comparison of the whole year 1879 with 1878, we have compared the gross earnings for the last four months of the year, during all but some 12 days of which rates were maintained and traffic was heavy in both years. For these four months the gross earnings were \$2,451,089 in 1879, against \$1,670,771 in 1878, the increase being thus nearly 50 per cent. This, however, cannot have been all due to the new road, but rather to the general improvement of business. The line between Chicago and St. Louis is likely to be greatly benefited by the revival of the iron business. There are more steel-rail mills on this road (counting those at its termini) than on any other in America—two at Chicago, one at Joliet, one at Springfield and one at St. Louis. Such establishments afford an enormous amount of transportation in carrying ore, lime, coal, coke and pig to the mills, and rails away. Probably the Chicago & Alton serves all five of these works to some extent, and three of them must have a very large part of their transportation done by it. It is also a great coal road (for a Western road), carrying 817,351 tons in 1879, which was a quarter more than ever before, and the revival of manufacturing industry is sure to stimulate coal production. In Illinois the road has more to hope from the manufacturing and mining interests than from the agricultural. In prosperous times manufactures grow rapidly in Illinois, but there is not much growth of the agricultural population there. It is the towns and cities that grow.

Uniformity of Car Construction—How to Bring it About.

In an article on this subject, which was published in the *Railroad Gazette* of Dec. 27, 1878, allusion was made to the fact that the different lines of road in the country were gradually falling into great systems, which, to a great extent, had common interests, and it was then anticipated that the much-needed uniformity of car construction would be brought about, not by the adoption of a single standard for the whole country, but of several, one for each of the great systems. In the article referred to it was said:

"The New York Central, with the Boston & Albany, Lake Shore, Canada Southern, Great Western of Canada, Michigan Central and Wabash, with their connections, may be

said to form one great system. The Pennsylvania, with its leased lines, and the Baltimore & Ohio each forms another. It would be a very much easier matter to induce each of these to agree to plans for the uniform construction of cars for its own system than to get them all to agree upon one plan."

In the *Railroad Gazette* of Feb. 27 of this year the following paragraph appeared:

"Messrs. Leander Garey, Superintendent of the Car Department; David Hoyt and C. E. Garey, Master Car-Builders of the New York Central & Hudson River; John Kirby, of the Lake Shore & Michigan Southern; John Orton, of the Canada Southern, and Robert Miller, of the Michigan Central, met in New York last week, and, after five days' discussion, finally agreed upon standard and uniform patterns for box, stock and other freight cars, to be adopted on all the roads represented."

These two quotations read almost like prophecy and fulfillment. The statement that standard and uniform patterns for box, stock and other freight cars were agreed upon is, however, not correct. All that was done at the meeting referred to was to determine certain features, including standard dimensions, about which those present were in entire accord. It was then agreed that each of them would go home and build one or more cars to conform to the conditions which were decided upon, but each is at liberty to use his own judgment about the other details. After these cars are completed, specimens of each will be sent to a central point, like Buffalo, and the gentlemen named, with some of the most experienced car-manufacturers, will again hold a conference and sit in judgment on the cars and from them establish standards for all the parts. This method of arriving at uniformity for the New York Central system of railroads seems a very excellent one, and we have learned that already quite a considerable number of applications have been received from other lines for copies of the plans and specifications, which of course have not at present any existence.

Considering how great the advantages would be if freight cars could be made of a uniform plan, it is singular that it should be so difficult to induce the managers of railroads to cooperate in bringing it about. Probably if it had not been that all the roads whose master car-builders met in New York were under the control of one head, such a meeting could not have been brought about, or at least no conclusion which could have been acted upon would have been reached. And yet it would obviously be to the interest of all the companies whose lines centre in Cleveland and Chicago to cooperate with the New York Central in this matter, and the only thing which probably prevents them from doing so is the lack of some obvious method of doing it. It seems, nevertheless, as if this might be done in a very simple way, since Mr. Garey has organized the movement. Thus, suppose that the manager, of say the Rock Island or the Northwestern railroad, on hearing of what the car-builders of the Vanderbilt lines have done, should ask that his car-builder should be permitted to take part in the deliberation, and should agree to adopt the conclusions of the majority, provided the vote of each representative was proportioned to the mileage of his road, or the number of cars owned. In this way his line could have the benefit of the advice and knowledge of a number of the most experienced and skillful car-builders in the country, and at the same time the effect would be to introduce a common standard on all the roads represented.

The difficulty of inducing a number of corporations or their managers to cooperate is very great, however, and seems to increase almost in proportion to the square of their number. It is this difficulty which has prevented the general adoption of the standards proposed by the Car-Builders' Association. At the meetings of the latter the effort has been made year after year to recommend certain standards, which, it was thought, the different roads would adopt, and thus uniformity would be brought about. These efforts, as most of our readers know, have met with but a limited success, although at the present time the standard axle, we believe, is gradually working its way into use on a great many different lines. Meanwhile, as we have pointed out, the tendency has been for different lines to unite in great systems, and on these a gradual process of development goes on which ultimately evolves some standard forms of construction. Of course it is true that a few different standards are better than a few dozen, but while it would be a great advance to lessen the diversity, still some of the results which would be attained by uniformity are as far off with three different standards as they would be if there were three hundred. Thus, at one of the meetings of the Car-Builders' Association it was pointed out that when brake shafts are placed on opposite sides on the ends of different cars, when two of them come together the brake-wheels come in contact and are either broken or have to be removed to prevent breaking. If the latter, they are then often insecurely fastened afterward, and those who use them are in danger of being thrown

from the car by the wheel becoming detached while they are holding on to it.

A case was reported in the *Railroad Gazette* of Feb. 20 of this year in which a yard-man on the Michigan Central Railroad, who was injured by having his hand and arm caught between the "bumpers" of two Erie cars which were provided with "dead-woods" or "dead-blocks," sued the company and recovered \$5,000 damages, on the ground that they are extremely dangerous, and that it was gross carelessness on the part of the railroad company to use them. In Pennsylvania, we have been informed, a suit was brought against a company because a brakeman or yard-man was injured by cars which *did not* have the dead-blocks, but had a single buffer-block, such as is used on the New York Central line. Whether a verdict was given for the injured man we do not know,* but it illustrates the liability which railroad companies incur by the present want of agreement among themselves. We shall not undertake to say at present whether the arrangement of "dead-blocks"—that is two blocks on the ends of cars, one on each side of the draw-bar—is preferable to that of a single "buffer-block" above the draw-bar; but it is certain that one plan only should be used. There can be no doubt that the use of both together is attended with very great danger, especially when a car with two dead-blocks comes in contact with another having one buffer-block. In that case if one of the draw-bars or its supports should break, the blocks on the ends of the cars, which are intended to act as distance pieces in such cases, to keep the two cars apart, will lock into each other, that is, the central buffer-block will come between the two dead-blocks and thus allow the end-sills to come so close together as to be almost certain to crush or kill a man between them. From a merely selfish point of view, then, if juries render verdicts similar to that referred to in case men are injured from this cause, railroad companies will find it to their interest to agree among themselves on some uniform method of constructing these parts of cars. If we consider the awful nature of the accidents from this cause, and also the great number of them, any one with any spark of humanity must be willing to do all that is possible to lessen the danger. Practically, this can only be done by general agreement between the different companies, which, as already mentioned, is very difficult to bring about.

There can be no doubt that in many cases the Car-Builders' Association has not received due credit for all that it has done. It is also true that by many managers it is not regarded with that degree of confidence that it should receive, if it does the work which it has undertaken. At present there is no better instrumentality in existence for bringing about uniformity, which is so much needed, than this Association. The question then arises, What could be done to induce those in authority on railroads to have that confidence in the proceedings of this Association as would lead them to adopt its recommendations.

There can be no doubt but that the fact that the Association has an independent existence, quite outside of the authority of the managers of railroads, has the effect, in a measure, to lead them to withhold their sanction to its proceedings. Closely related to this question of irresponsible existence, too, is the fact that the influence and the votes of members are in no way made proportional to the interests which they should represent. A member who occupies an obscure position, where he has had little opportunity for gaining knowledge or experience, and who may have the care of a few hundreds of cars, has as much voice as the head of a car department on a great through line, who has the responsibility of caring for many thousands of cars. Universal and equal suffrage may be a correct theory when exercised to protect political rights—although there is good reason to doubt it; but when great pecuniary interests and engineering questions must be considered and decided, the voice of those who take part in such deliberations should be proportionate to their responsibility. It is not surprising, perhaps, that great lines like the Pennsylvania, the Baltimore & Ohio or the Erie road should refuse to follow the recommendation of an association in the appointment of whose members the company or its managers had no voice, and whose influence bore no proportion to their responsibility. What would seem to be a wise thing to do would be to place the Association in such a relation to the companies that their managers would have control over its membership, if they saw proper to exercise it, and at the same time give to each member a voice proportionate to the interests he represents. This, it is believed, would give the managers of the railroads a feeling that

the Association was working in cooperation with them, instead of being on an independent basis; and it is certain that when a question arises regarding the construction of cars the party who will build a thousand should have more voice in deciding what standards should be used than he who will build only a hundred.

As a practical measure, the end suggested could be brought about very readily, if, at the next convention, the Association should adopt a resolution requesting the managers of all railroads to send representatives to a meeting where an opportunity would be given for those who are sent to make such amendments to the Constitution as may to them seem desirable. This would make it an organization of the representatives of the managers, and bring it into direct relations with the latter officers. At present a separation exists, and probably until some closer relations can be established, it never will have the influence and authority which it is very desirable to have exercised by an organization of some kind. Such a relation would do more to make it possible to bring about uniformity than perhaps any other one thing could.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Louisiana Western.—Extended eastward to Lacasse Bayou, La., 6½ miles. Track also laid from the Sabine Crossing, La., eastward 11 miles.

Warwick Valley.—Completed by laying track from Vernon, N. J., north by east to Warwick, N. Y., 8½ miles.

Northern Pacific.—Track on the *Pend d'Oreille Division* is laid from Ainsworth, Or., eastward twenty miles, an extension of 10 miles.

Oakdale.—Track laid from Oakdale Furnace, Tenn., west 4 miles. Gauge, 3 feet.

Cleveland, Tuscarawas Valley & Wheeling.—Extended from Uhrichsville, O., south by east 48 miles.

Southern Pacific.—Extended southeast to Tucson, Arizona, 70 miles.

This is a total of 158 miles of new railroad, making 733 miles thus far in 1890, against 204 miles reported at the corresponding time last year.

THE WABASH, ST. LOUIS & PACIFIC is working northward further than is agreeable, probably, to the roads from Chicago to the west. It got a good position for the Omaha business by the completion of its Omaha Extension last year, but the full effect of this cannot be felt until it has its Chicago line completed. The track is all laid on this now, and it will probably be opened for traffic within a few weeks. But this only comes in contact with the three Chicago-Omaha lines at their two extremities, the route of the Wabash being south by west some 100 miles from Chicago, then west, and then northwest, passing around and to the south of the other roads, though it comes in contact with branches of the Chicago, Burlington & Quincy and the Chicago, Rock Island & Pacific at several points, as Peoria, Keokuk, Burlington, Quincy, and a few little crossing towns in Missouri, while the junction at Ottumwa is not on the Chicago-Omaha line of the Wabash, nor accessible through that road to Chicago except by making a great circuit. Indeed, the northern border of the Wabash system has been very irregular and undefined. Now the news comes that it has acquired the Missouri, Iowa & Nebraska Railroad, which extends from Keokuk, partly in Missouri and partly in Iowa near the boundary between these two states, about half way to the Missouri River. This road forms a direct extension of the Wabash's line from Lafayette to Warsaw (late Toledo, Peoria & Warsaw), and can be worked by it either for Toledo or Chicago traffic as well as by any one, though the Chicago, Burlington & Quincy would make just about as good an outlet for it. So far as it is built, however, the Missouri, Iowa & Nebraska is not worth much, as there are competing roads everywhere within a few miles of it. It was originally intended to extend it through to the Missouri at Nebraska City, within a few miles of the Missouri line. The Chicago, Burlington & Quincy, however, has filled the southern tier of counties in Iowa so full of branches that it would hardly seem advisable to follow out this plan, but rather to deflect to the southward from the present terminus at Corydon, or at Leon, some 30 miles further west, where the Burlington road has a station, and strike the Omaha Extension of the Wabash at Maryville, or some other point in Missouri not much further west. In this way a considerable territory between the Burlington's branches and the Wabash's branch line, now without any road, would be occupied, and it would not be necessary to build more than 50 or 100 miles, instead of the 150 that would be required to reach Nebraska City, while there is no occasion for the Wabash to go to Nebraska City; but a shorter line from Chicago to Omaha would be worth something to it. It will have a line from Chicago to Keokuk about 270 miles long, against 250 by the Chicago, Burlington & Quincy; thence to Corydon, the present terminus of the Missouri, Iowa & Nebraska, is 118 miles; about 100 would extend it to Maryville, and thence to Council Bluffs is 92 miles. Thus might be made a line 560 miles long from Chicago to Council Bluffs, against 635 miles by way of Quincy. It is said that a branch of the Missouri, Iowa & Nebraska will be built to a connection with the Iowa Central, but with this exception the newly-acquired road will probably be the

northern border of the Wabash system. Its nearest neighbor in this direction is the Chicago, Burlington & Quincy, and it will probably put an effectual bar against further extensions southward of local branches of the latter road, which has been reaching out in both directions as if it meant to occupy all the territory left vacant on either side of it. But the Wabash cannot work lines further north for *Eastern business* to advantage, and the traffic of that country mostly moves on east-and-west lines. For traffic to St. Louis it is the best route, or as good as any, and the north-and-south roads being built, it is natural that it should work one of them, though it would probably be better served by a more direct road to Chicago. The convenience or cheapness with which it can carry traffic from Central and Northern as well as Southern Iowa will not, however, be the measure of its influence on rates and business. Its power will be materially increased, because it will be able to compete to some extent with powerful companies which heretofore have been entirely outside of its field.

THE NEW EAST-BOUND CLASSIFICATION adopted at the last meeting of the Joint Executive Committee is printed with the tariff of March 8. It was only the grain rate, it will be remembered, that was reduced March 1. The other changes were made a week later. The new classification will take some time to get accustomed to, doubtless, but it is perfectly simple—very much more so than the old one, which besides the four classes had a large number of rates for articles specially named, as grain, fresh beef, meats, cheese, etc., and was full of notations showing that the article in question was charged a rate in some way varying from that of the class to which it nominally belonged. The new classification has eleven classes. Six of these are classed as "fixed" rates, that is, such as are not usually changed when grain and old fourth-class rates are changed, and presumably applied to articles which the railroads are pretty sure to carry whether navigation is open or not, and little affected by the accidents of trade. The first three of these are the old first three classes, which have been changed but once in many years, during which there have been scores of changes in the lower-class rates. Class 4 includes cheese in refrigerator cars, eggs by the car-load, dried fruit in less than car-loads, fresh fish in car-loads at owner's risk, printing and wrapping paper, released, in less than car-loads, clover and timothy seed in less than car-loads, baled hemp at owner's risk of fire and water, a number of coarse manufactures of wood, certain tools, and perhaps a dozen other articles of less importance. The rate is 60 cents per 100 lbs. from Chicago to New York. The most important article in Class 5 is cheese not in refrigerator cars; it also contains domestic sheetings, etc., in car-loads at owner's risk, high wines, etc., in quantities of 5 to 65 barrels, and a few articles of merchandise like croquet sets. Class 6 contains a great variety of merchandise, many of which were formerly in the variable fourth class. The rate is 50 cents for the fifth and 45 cents for the sixth class. This closes the "fixed rates." Class 7, the first of the fluctuating rates, includes packed meats and provisions (pork, beef, lard, bacon, hams, tallow, etc.). Class 8 includes grain in bulk or sacks, coal, coke, pig iron, iron ore, guano, and other fertilizers, and a few other cheap articles, when taken in car-loads—all, we believe from from the old fourth class. Class 9 is the flour rate, that is, a rate per barrel twice as great as the eighth-class rate per 100 lbs., and it might be omitted by placing flour and meal in the eighth-class rate, with the proviso that a barrel should be counted as 200 lbs. Class 10 is the lumber rate, and Class 11 the rate on bulk meats (cured, but not packed), which heretofore has been given as "5 cents more than fourth-class rates."

The very first change in rates virtually split one of the classes, though only for a week. The Chicago-New York rate was reduced from 40 to 35 per 100 lbs. on grain March 1, but on the other articles in Class 8 not till March 8. It is questionable whether grain and flour should not always form a class by themselves, as the rates on these articles are likely to be affected more frequently than and sometimes differently from those on the other eighth-class freights. The other articles, however, are not carried from the West to the East to any extent. The great staples of east-bound freight are in classes 7, 8 and 9 (packed meats, grain and flour). Fresh meats are in the second class. For freights lower than the fifth class, refrigerator cars will be supplied for an extra charge of 5 cents per 100 lbs., the shippers to furnish the ice.

THE ADVANCE IN WAGES is one of the most satisfactory features of the recent improvement of railroad and other business. Indeed, without it, this prosperity would be altogether one-sided, not reaching the great majority of the community, and being for them a decided misfortune. One of the accompaniments of this prosperity is higher prices for almost every article of consumption, so that a dollar now is really not worth so much as it was a year ago. It procures less bread, meat, clothing, etc. It is true that a considerable number of railroad and other employes found their condition considerably improved before there was any advance in wages, because they found themselves fully and steadily employed where before there was not work enough to keep them at work full time every day. The very small monthly income that some train-men and shop men have received cannot be estimated from the schedule of daily wages. Last fall, however, train-men especially, whose wages depend more or less on the number of miles they run, were often making large monthly wages, getting a good many days in the month—sometimes, doubtless, more than was good for

* We shall be obliged to any of our readers who will give us correct information about this case.

them or the roads—very hard work and pay in proportion. The first restoration of wages was made by Mr. Vanderbilt March 1, putting all employes on the scale paid before the reduction of July, 1877. The Lake Shore and some other roads made an advance at the same time. The Pennsylvania announced an advance "not later than the first of April" to its great army of employes, in its annual report, and a very large number of roads have since made or announced an advance. This will doubtless differ on different roads, as the reductions have differed, and some before the reduction were paying more than the ordinary rates paid by their neighbors, and will not be likely to do so hereafter. As a rule, and in the long run, railroad wages must follow the course of other wages, without much regard to railroad profits. In most trades and occupations wages have advanced, and it would have been a national calamity if they had not. Of course railroad profits will be limited by this advance, just as they have been by the great rise in the prices of iron and other materials. The yearly expenses of the New York Central will be increased about half a million dollars by it, and of the Vanderbilt roads altogether more than a million. A similar advance on all the railroads of the United States would amount to about ten millions. The New York Central's advance will give each man, on the average, an addition of nearly \$50 a year to his wages.

THE NEW YORK FREIGHT BILL reported by the Hepburn Committee is receiving marked opposition from a very large class of shippers, and the manifestation of opposition to it is very much greater than any movement ever made in favor of it. Large numbers of merchants and manufacturers from the interior of the state have visited Albany to protest against the passage of the bill, the New York Butter and Cheese Exchange has rejected resolutions endorsing the bill, and after full discussion adopted a majority committee report, which declares that the bill "would deprive the railroad interests within this state of their just rights, and so cripple them that they would be unable to compete with the railroads in the adjoining states, which are not subject to like legislation, and thereby greatly injure the facilities now offered, not only to the butter and cheese trade, but to every commercial interest connected with this city." This report, however, declared that unjust discriminations have been made in the past, and recommended some action to prevent it hereafter, "and recognize the broad principle of a uniform rate to all parties under the same circumstances and conditions." Most significant of all, however, was the action of the New York Produce Exchange last Wednesday. This is by far the most important commercial body in New York, so far as transportation is concerned. Its members, doubtless, receive more rail freight than all other merchants in the city put together, with the possible exception of those in the coal trade. And their business is one which can be more affected by discriminations in rates than almost any other. Mr. F. B. Thurber, who has been the chief promoter of the investigation, and has advocated it and restrictive legislation with great energy and perseverance, was admitted, though not a member of the Exchange, to speak in favor of the bill; but, by a vote of two to one, the Exchange passed resolutions "protesting at this time against the passage of any bill regulating such traffic emanating from the state of New York, believing it would result disastrously to the commercial prosperity of the city of New York, the agricultural, manufacturing and mercantile interests of the state, and the best interests of its citizens." These resolutions also said that, "while some irregularities may exist, it is, nevertheless, unwise and dangerous on the part of this state to hamper by legislation the New York railroads in their contest with competing roads, managed in the interests of rival seaboard cities, for the inland transportation trade of the United States."

This action is likely to have a decided effect on the Legislature, we should say.

THE GRAND TRUNK RAILWAY, it is reported, has taken a large amount of grain from Chicago this winter by a route never before utilized, and which, indeed, could only be utilized in an open winter. The shipments have been made by the propellers which, when the straits are open, ply between Chicago and Sarnia. These have taken the grain down and across Lake Michigan to the Flint & Pere Marquette road at Ludington, which has delivered it to the Grand Trunk's Chicago & Lake Huron road. The pool did not include lake shipments, and there has been no pool at Milwaukee. But doubtless, lake shipments (that is, to Michigan roads) would have been included if it had been supposed that there could be any. Everybody knows that a pool at Milwaukee leaving out the shipments across the lake to Grand Haven would amount to very little; but in ordinary winters Chicago has very little communication across the lake, and it never has had a regular steamboat connection with a railroad across Lake Michigan since the Michigan Central was extended from New Buffalo to Chicago. The most remarkable thing about these shipments (it is reported that fifty cargoes have been sent, but this is probably an exaggeration) is that no one in Chicago seems to have known of them. They were not reported to the Board of Trade, which assumes to keep an accurate daily record of all shipments; and it is said that the propeller touched at Milwaukee and that the grain was reported as being shipped from Milwaukee. It has been known that the Grand Trunk has delivered an unusually large amount of grain at Portland and Boston the past winter, but it has been charged chiefly to its making lower export rates in combination with connecting steamer lines than the other roads would make. Both these places have had an unusually

large share of the grain business this winter. The rates accepted on these shipments by way of Ludington are rumored to have been three cents per 100 lbs. below the regular rate. With the latter as high as it has been the past winter, this left a remunerative rate to the carriers.

LAKE NAVIGATION is not likely to be open so soon as was expected a week ago, when the Straits of Mackinaw were open, and at least one propeller at Chicago purposed to sail for Sarnia immediately. The storm of last week closed the Straits again and on Friday teams crossed on the ice, and now it is quite possible that they will remain closed till the middle of April or later. Shippers who were counting on sending their grain by lake in a few days are now more inclined to patronize the railroads, and the prospect is that the 35-cent rate will last for some time to come; and the later navigation opens the higher lake rates are likely to be after it opens.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows: Louisville & Nashville, special meeting, at the office in Louisville, Ky., March 26. Transfer books close March 23. Massachusetts Central, special meeting, in Boston, March 25, to vote on lease to the Boston & Lowell Company. International & Great Northern, annual meeting, at the office in Palestine, Tex., April 5. Valley of Ohio, annual meeting, at the office in Cleveland, O., April 21, at 11 a. m.

Dividends.

Dividends have been declared as follows: Union Pacific, 1½ per cent., quarterly, payable April 1. Lehigh Valley, 1 per cent., quarterly, payable April 15. New York Central & Hudson River, 2 per cent., quarterly, payable April 15.

Foreclosure Sales.

The property of the old Indiana Southern Company was sold in Vernon, Ind., March 11, under a decree of the United States Circuit Court, and bought for \$50,000 by John R. Stolzberger, of New Albany, Ind., as attorney. The property includes the road-bed so far as completed, right of way and franchises from Ft. Wayne, Ind., to Jeffersonville, and the sale was made subject to the right of the Ft. Wayne, Muncie & Cincinnati and the Ohio & Mississippi companies to remove from the property ties, rails and other improvements placed thereon by them. No part of the road was ever completed, but the right of way from Ft. Wayne to Muncie was used by the Ft. Wayne, Muncie & Cincinnati, and from North Vernon to Jeffersonville by the Louisville Branch of the Ohio & Mississippi. Doubtless the purchasers are willing to make arrangements with those companies.

The Pittsburgh & Castle Shannon road was to have been sold in Pittsburgh, March 12, but the stockholders secured a stay of 40 days from the Court. It is expected that during that time arrangements will be made to settle the pressing claims against the company.

The sale of the Washington City, Virginia Midland & Great Southern road is now announced to take place in Alexandria, Va., May 13, under the decree of foreclosure lately granted.

The New Orleans & Mobile road will be sold in New Orleans, April 24, by the trustees, under the decree lately granted by the United States Circuit Court. The sale will include the road from New Orleans to Mobile, 141 miles; \$100,000 will be required in cash, the balance payable in bonds. It is understood that the road will be bought in the Louisville & Nashville interest.

National Association of General Passenger & Ticket Agents.

The meeting of this Association opened in Cincinnati, March 16, but no particulars have been received of the business done so far. The first day's session was passed chiefly in committee of the whole on passenger rates.

Railway Car Accountants' Association.

The following circular is issued by Mr. Frank M. Luce, Secretary of this Association:

"The next meeting of our Association will be held in Louisville, Wednesday, April 28, 1890, at 10 o'clock a. m."

"The Committee of arrangements have selected the Galt House. Special rates have been made for delegates, two dollars per day during session of convention."

"An invitation is extended to all railroads and fast freight lines to send a representative to the meeting."

Central Railroad Rate Association.

A dispatch from St. Louis, March 17, says: "The Wabash, St. Louis & Pacific issues a circular announcing its withdrawal from the agreement establishing minimum rates on business to and from Burlington, Keokuk, Quincy and Hannibal, as given in the tariffs of the Central Railroad Rate Association. Hereafter it will pro-rate to and from those points, in accordance with percentages in effect prior to the formation of the Central Railroad Rate Association, on all freight destined to those points proper, or to points beyond."

Southwestern Railway Association.

At the meeting in St. Louis last week, the committee appointed to reorganize the pool made a report, which was adopted. It divides the roads belonging to the Association into two divisions, instead of three as heretofore, to be called the St. Louis Division and Chicago Division. The St. Louis Division includes the Chicago & Alton, Missouri Pacific and Wabash, St. Louis & Pacific roads; and the Chicago Division the Chicago & Alton, Chicago, Burlington & Quincy, Chicago, Rock Island & Pacific, Hannibal & St. Joseph and Kansas City, St. Joseph & Council Bluffs roads. The percentages are to be adjusted by arbitration and awards made prior to April 1, and to govern all business done from Dec. 31, 1879, to July 1, 1880. If any party is dissatisfied with the awards made by the board of arbitrators, notice must be given within five days after the awards are promulgated, when another arbitration will be made, and if this is not satisfactory the party may withdraw from the association by giving 90 days' notice. The arbitrators for the St. Louis division are W. B. Strong, General Manager of the Atchison, Topeka & Santa Fe, and C. W. Smith, Traffic Manager of the Chicago, Burlington & Quincy, and for the Chicago Division C. C. Wheeler, Assistant General Superintendent of the Chicago & North-western, and J. F. Tucker, Traffic Manager of the Illinois Central. Percentages are to be based upon tonnage and net earnings. As the Chicago Branch of the Wabash road is expected to be finished by June 1, awards will be made for that road when they are fixed for other lines. This branch will be in the Chicago Division. This arrangement is to go into effect at once, and cover all business done since Dec. 31, 1879. A resolution was adopted that from and after

March 10 no road belonging to the Association, nor any agent, shall have authority to make any other rate than that fixed by the Commissioner of the Association. Freight rates to Chicago, which went into effect March 1, were slightly modified so as to conform to those of the trunk lines. J. W. Midgley remains Commissioner at Chicago and Geo. L. Carman Agent at Kansas City. An agent for St. Louis will be appointed in a few days.

The next meeting will be held in Chicago, March 31.

ELECTIONS AND APPOINTMENTS.

Atlanta & Charlotte Air Line.—At the annual meeting in New York, March 10, the following directors were chosen: Skipwith Wilmer, Baltimore; Belden R. McAlpine, Hiram Sibley, Rochester, N. Y.; P. P. Dickinson, Wm. H. Fogg, Wm. A. Hadden, Abraham S. Hewitt, Richard Irvine, Jr., Wm. B. Isham, Eugene Kelly, Francis Smith, New York. The new directors are Messrs. Hadden and Irvine, who succeed Francis P. Clark and Alexander P. Irvine.

Chicago & Western.—The directors of this new company are: Martin Beem, E. S. Benson, N. P. Hanson, Richard H. Lee, E. R. Newman, F. D. Raymond, George A. Williams. Office in Chicago.

Chicago, Rock Island & Pacific.—Mr. John Given has been appointed Superintendent of the Keokuk & Des Moines Division, in place of Frank K. Hain, who has gone to the Manhattan Elevated road. Mr. Given has been General Freight Agent for a long time.

Cleveland, Columbus, Cincinnati & Indianapolis.—Mr. G. M. Beach has been appointed Road-Master, with office in Cleveland, O.

East St. Louis & Carondelet.—The following officers have been chosen: President, J. W. Conlogue; Secretary, John B. Bowman; Treasurer, W. H. Barnes; Cashier, W. C. Hewitt; Superintendent, George C. Knowlton. Mr. Knowlton succeeds J. W. Jones, resigned; the others are re-elected.

Janesville, Beloit & Rockford.—The officers of this new company are: President, M. C. Smith; Vice-President, J. M. Cobb; Secretary and Attorney, A. A. Jackson; Treasurer, Hiram Merrill.

Kansas City Union Depot.—Maj. A. B. Garner is appointed Superintendent, in place of C. L. Dunham, resigned.

Knox & Lincoln.—At the annual meeting in Bath, March 10, the following directors were chosen: John T. Berry, Francis Cobb, Rockland, Me.; Edmund Wilson, Thomaston, Me.; E. O. Clark, Waldoboro, Me.; D. W. Chapman, Damariscotta, Me.; Edwin Flye, Newcastle, Me.; Henry Ingalls, Wiscasset, Me.; George A. Preble, Bath, Me.; F. G. Richardson, Portland, Me. The only new director is Mr. Richardson, who succeeds Edwin Reed, who declined reelection.

Lehigh Valley.—Mr. E. B. Byington has been appointed General Passenger Agent. He has been for some time General Western Agent at Buffalo.

Michigan Central.—Mr. Samuel Powell has been appointed Assistant General Passenger and Ticket Agent. He was recently on the Baltimore & Ohio, but for many years was General Ticket Agent of the Chicago, Burlington & Quincy, and has had a wide and varied experience in the passenger business.

Michigan General Passenger Agents' Association.—The following officers were elected at the last meeting: President, A. B. Leet, Grand Rapids & Indiana; Vice-President, S. R. Callaway, Detroit & Bay City; Secretary and Treasurer, F. J. Whitney, Michigan Central.

Missouri Pacific.—Mr. France Chandler has been appointed General Passenger Agent of the Missouri Pacific Railroad, according to the office March 15. Mr. Chandler has had some 25 years' experience in railroad service, which he entered very soon after leaving college in 1854. He was for several years in the service of the Chicago & Rock Island; for a time at Indianapolis (with the Vandalia Line, we believe), General Ticket Agent of the St. Louis, Kansas City & Northern, Assistant General Ticket Agent of the Illinois Central, and latterly for some years General Ticket Agent of the Chicago, St. Louis & New Orleans, with office at New Orleans, which he leaves, to go to St. Louis.

Nashville, Chattanooga & St. Louis.—Col. E. W. Cole having declined to withdraw his resignation, the office of President of this company has been offered to Ex-Gov. James D. Porter, of Nashville, Tenn., and he has accepted. The change will take place in a few weeks.

New River.—Mr. John Graham, Jr., is chief engineer, and has his office at Pearisburg, Giles County, Virginia.

New York, Albany & Buffalo.—The officers of this new company are: Joseph H. Ramsey, President; F. K. Frothingham, Secretary; Henry R. Pierson, Treasurer.

New York Central & Hudson River.—Mr. Henry J. Hayden has been appointed General Traffic Manager, in place of Mr. J. H. Rutter, chosen Third Vice-President. Mr. Hayden has been for many years General Freight Agent of the Boston & Albany.

At a meeting of the board held March 10, Hon. Chester W. Chapin, of Springfield, Mass., was chosen a director to fill a vacancy.

Orange Ridge, De Land & Atlantic.—Mr. Charles Delano has been appointed Chief Engineer of this new Florida road.

Pennsylvania.—Mr. Henry W. Gwinner having tendered his resignation, Mr. M. Riebenack has been appointed Auditor of Passenger Receipts, and A. J. Gillingham Assistant Auditor of Passenger Receipts. To take effect April 1, 1890.

Pittsburgh, Cincinnati & St. Louis.—At the annual meeting in Columbus, March 16, the following directors were chosen: D. S. Gray, Columbus, O.; Robert Sherrard, Jr., Steubenville, O.; W. H. Barnes, J. N. McCullough, Thomas D. Messler, Wm. Thaw, Pittsburgh; J. N. DuBarry, H. H. Houston, Strickland Kneass, Wistar Morris, George B. Roberts, Thomas A. Scott, John Price Wetherill, Philadelphia.

Red Hill, Fairplay & Leadville.—At a recent meeting the directors of this new company elected Norman H. Meldrum, Treasurer; Owen H. Henry, General Superintendent; J. E. Cole, Assistant Superintendent.

Richmond & Allegheny.—Major R. H. Temple has been appointed Chief Engineer and Mr. H. D. Whitcomb Consulting Engineer. Offices in Richmond, Va.

St. Louis & San Francisco.—The new board has elected Gen. E. F. Winslow, President; James D. Fish, Vice-President; C. Littlefield, Secretary and Treasurer.

St. Louis Bridge.—The following directors were chosen at the recent annual meeting: G. B. Allen, Solon Humphreys, J. P. Morgan, Edward Walsh, Jr., E. W. Woodward.

St. Louis, Iron Mountain & Southern.—Mr. E. L. Dudley is appointed Assistant General Superintendent, with office in St. Louis. Mr. J. W. Brown is appointed Superintendent of Texas Division, with office at Texarkana. These appointments date from March 6.

St. Louis Tunnel.—The following directors were chosen at the recent annual meeting: N. S. Chouteau, W. S. Humphreys, Wm. Taussig, A. J. Thomas, Julius S. Walsh.

St. Louis Union Depot.—The following directors were chosen at the recent annual meeting: W. H. Clement, Samuel Gaty, D. W. Griswold, J. N. Kinney, R. M. Shoemaker, J. M. Thompson, E. W. Woodward.

Sioux City & Nebraska.—Mr. O. D. Brown has been appointed General Superintendent and Chief Engineer for this company, which owns the St. Paul & Sioux City lines in Nebraska.

Strawberry Hill & Nantasket Beach.—The officers of this new Massachusetts company are: President, Eben D. Jordan; Directors, William H. Long, Charles Marsh, William F. Shedd, W. Dexter Wiswall; Clerk, W. F. Strong; Treasurer, George D. Clark; office in Boston.

Union Railway & Transit Co., of St. Louis.—The following directors were chosen at the recent annual meeting: W. H. Clement, J. N. Kinney, R. M. Shoemaker, J. M. Thompson, E. W. Woodward.

Warwick Valley.—This company, formed by the consolidation of the Warwick Valley and the Wawayanda companies, has elected the following directors: John H. Brown, Wawayanda, N. J.; J. C. Houston, Bellevue, N. Y.; Grinnell Burt, James Burt, H. B. DeKay, C. H. Demarest, Ezra Sanford, John L. Welling, S. C. Welling, R. Wisner, Warwick, N. Y.; Homer Ramsdell, Newburgh, N. Y.; D. B. Halstead, W. C. Sheldon, New York. The board elected Grinnell Burt President; James Burt, Vice-President; C. H. Demarest Secretary; Thomas Burt, Treasurer. The company's office is at Warwick, Orange County, New York.

PERSONAL.

—Gen. Henry A. Thompson, who died in Baltimore, March 12, in the eightieth year of his age, graduated from West Point in 1819, and served in the army for 20 years. Since 1839 he has been in business in Baltimore. He was at one time for several years a director of the Philadelphia, Wilmington & Baltimore, and from 1856 to 1861 a director of the Baltimore & Ohio.

—Mr. Henry W. Gwinner, Auditor of Passenger Receipts of the Pennsylvania Railroad, has resigned his position from April 1 next, and will become President of the Hoole Manufacturing and Baggage Check Company, of New York. He will also devote much of his time to his duties as President of the National Railway Publication Company. Mr. Gwinner has been 22 years in the service of the Pennsylvania Railroad, rising gradually to his present position.

—Mr. H. G. Brooks, of the Brooks Locomotive Works, was recently elected Mayor of Dunkirk, N. Y., defeating Mr. H. S. Beggs, Superintendent of the Western Division of the Erie. It looks as if Dunkirk was bound to be run by a railroad man anyhow.

—Mr. D. N. Skillings, of Winchester, Mass., a large lumber merchant and for several years a state director of the Boston & Albany, died last week.

—Mr. Joseph Bringham, an old and wealthy citizen of Wilmington, Del., died in that city March 14 in the seventy-third year of his age. He was a large stockholder, and for many years a director of the Philadelphia, Wilmington & Baltimore and the Delaware Railroad Companies.

—Mr. Wm. Zion, projector and first President of the Anderson, Lebanon & St. Louis road, died at his residence in Lebanon, Ind., March 15, aged 76 years. He left considerable property and was noted for his active interest in all new enterprises.

—W. D. Hilton, for 22 years and until a little over a year ago Superintendent of the Providence & Worcester road, has confessed to forging indorsements on notes to the amount of \$80,000. The forgeries extend back for several years, and were made to support him in some unsuccessful business ventures. He left the road chiefly because the directors thought he was too much engaged in outside business to attend properly to the duties of his office.

TRAFFIC AND EARNINGS.

Grain Movement.

For the week ending March 6, receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past seven years:

Year.	Northwestern— Receipts.	Shipments.	Atlantic receipts.
1874.....	1,428,500	831,826	1,324,097
1875.....	2,091,095	822,527	1,725,878
1876.....	2,421,476	1,912,005	2,432,802
1877.....	1,590,598	1,041,102	2,719,769
1878.....	2,833,118	2,341,877	3,253,417
1879.....	2,945,233	1,743,635	4,367,569
1880.....	3,893,233	2,285,216	3,791,968

Northwestern receipts and shipments and Atlantic receipts were all just a trifle less than in the preceding week, but were still among the largest of the year. The shipments of the Northwestern markets were the first made under the new and reduced rate, and though not quite so large as in the week before, they were very much larger than in any week last winter, when rates were very much lower.

Of the receipts of Northwestern markets, Chicago had 42.6 per cent.; St. Louis, 32.1; Toledo, 9.4; Peoria, 7; Milwaukee, 6.2; Detroit, 1.4, and Cleveland, 1.3 per cent. More than two-thirds of the whole was corn, and nearly half the corn receipts were at Chicago. On the other hand, three-sevenths of the wheat receipts were at St. Louis, and it received twice as much as Chicago.

Of the receipts at Atlantic ports, Baltimore had 32.4 per cent., New York, 25.5, Philadelphia, 19.6, New Orleans, 11.2, Boston, 7.7, Portland, 3.3 and Montreal, 0.3 per cent. With the total a little smaller than in the previous week, New York's receipts are a little smaller and Philadelphia's and Baltimore's are a little larger, those of both the latter the largest since October last. At this time last year they were getting about the same amount (a little less), but New York was getting a great deal more.

Exports of flour and grain from the seven Atlantic ports for four successive weeks have been:

	March 10.	March 3.	Feb. 25.	Feb. 18.
Flour, bbls.....	51,835	55,479	38,313	73,448
Grain, bush.....	4,035,901	3,014,553	2,547,161	2,765,100

The last week's exports were thus much the largest. About two-thirds of the grain then exported was corn.

In the eight weeks ending March 10 flour exports were 468,654 barrels this year, against 506,394 last, showing a decrease of 7.4 per cent., and grain exports have been 22,438,847 bushels this year, against 24,187,766 in the cor-

responding eight weeks of 1879, showing a decrease of 7.2 per cent.

Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending Dec. 31:	1879.	1878.	Inc. or Dec.	P. c.
At. & Charlotte Air Line.....	\$777,308	\$629,278	I.	\$148,120 23.7
Net earnings.....	251,621	196,212	I.	55,409 28.2
Cleve., Tus. Valley & Wheeling.....	446,749	474,525	D.	27,776 5.9
Net earnings.....	162,319	129,091	I.	33,228 25.7
Quincy, Mo. & Pacific.....	110,500	90,775	I.	19,715 21.5
Net earnings.....	38,415	21,957	I.	16,458 75.0
Wisconsin Valley.....	225,953	.....	.....	.....
Net earnings.....	88,125	.....	.....	.....

Two months ending Feb. 29:

	1880.	1879.	Inc. or Dec.	P. c.
Cairo & St. Louis.....	\$48,124	\$34,481	I.	\$13,643 39.5
Canada Southern.....	392,000	370,000	I.	22,000 59.2
Chesapeake & Ohio.....	401,018	190,780	I.	210,238 11.0
Chicago & Alton.....	1,012,598	651,418	I.	361,180 55.4
Cleve., Mt. Ver. & Delaware.....	67,928	52,622	I.	15,306 29.1
Flint & Pere Marquette.....	228,016	154,932	I.	73,084 47.2
Great Western.....	685,232	658,644	I.	26,588 4.0
Ill. Central, Ill. lines.....	879,969	844,459	I.	35,510 4.2
Net earnings.....	239,559	202,654	I.	36,905 18.2

	1880.	1879.	Inc. or Dec.	P. c.
Ind., Bloom. & West-ern.....	170,458	165,886	I.	4,572 2.8
Int. & Gr. Northern.....	297,960	309,144	D.	11,184 3.6
Minn. & St. Louis.....	91,150	55,628	I.	35,522 63.9
N. Y. Cen. & Hud. R.....	4,910,844	4,235,116	I.	675,728 16.0
Northern Pacific.....	138,262	81,672	I.	56,590 69.3
St. L., A. & T. H., Main Line.....	198,583	126,485	I.	72,098 57.0
St. L., A. & T. H., Belleville line.....	105,100	92,649	I.	12,451 13.4
Scioto Valley.....	41,763	41,157	I.	606 1.5
Wisconsin Central.....	177,827	111,449	I.	66,378 59.5

Month of January:

	1880.	1879.	Inc. or Dec.	P. c.
At. Miss. & Ohio.....	156,870	109,804	I.	46,976 42.8
Net earnings.....	84,205	28,705	I.	55,500 193.7
Bur., Cedar Rap. & No.....	184,316	117,362	I.	66,954 57.0
Net earnings.....	81,130	42,948	I.	38,182 89.0
Carolina Central.....	44,733	37,908	I.	6,825 18.0
Net earnings.....	19,115	15,624	I.	3,491 22.4
Central Iowa.....	78,019	58,061	I.	19,958 34.4
Net earnings.....	34,048	19,809	I.	14,239 71.9
Chesapeake & Ohio.....	202,335	88,967	I.	113,368 128.1
Net earnings.....	58,340	15,559	I.	42,781 275.2
Chi., Bur. & Quincy.....	1,200,238	1,105,098	I.	95,140 8.6
Net earnings.....	630,816	515,985	I.	114,831 22.3

	1880.	1879.	Inc. or Dec.	P. c.
Delaware & Hudson, leased lines.....	376,387	270,561	I.	105,826 39.1
Net earnings.....	165,164	95,415	I.	69,748 73.1
Gal., Har. & San Antonio.....	103,139	114,930	D.	11,791 10.4
Louisville & Nash-ville.....	467,671	450,476	I.	17,195 3.8
Net earnings.....	309,119	182,634	I.	126,485 69.3
Mem., Paducah & No.....	19,328	15,354	I.	3,974 25.8
Net earnings.....	3,772	4,220	D.	448 10.6
Mobile & Montgom-ery.....	78,154	80,809	D.	2,655 3.4
Net earnings.....	46,860	46,080	D.	780 1.7
Northern Central.....	334,494	265,002	I.	69,492 26.2
Net earnings.....	120,433	77,671	I.	42,762 55.0

	1880.	1879.	Inc. or Dec.	P. c.
St. L., Iron Mt. & So.....	555,983	334,029	I.	221,954 66.5
Net earnings.....	267,841	101,173	I.	166,668 164.7

Month of February:

	1880.	1879.	Inc. or Dec.	P. c.
Cairo & St. Louis.....	\$25,303	\$17,218	I.	\$8,085 47.0
Canada Southern.....	293,000	188,000	I.	105,000 55.9
Chesapeake & Ohio.....	198,683	102,093	I.	96,590 94.6
Chicago & Alton.....	488,543	307,681	I.	180,862 58.8
Chi., Clt., Du. & Minn.....	54,827	28,304	I.	26,523 93.7
Cleve., Mt. Ver. & Del.....	34,060	24,195	I.	9,865 40.8
Fl. & Pere Marquette.....	118,024	77,530	I.	40,494 52.2
Illinois Cent. Ill. lines.....	462,673	308,548	I.	154,125 50.0
Ill. Central Iowa lines.....	129,138	98,354	I.	30,784 31.3
Ind., Bloom. & West-ern.....	89,960	82,952	I.	7,008 8.4
Int. & Gr. Northern.....	139,331	147,326	D.	7,995 5.4
Minn. & St. Louis.....	48,212	28,122	I.	20,090 71.5

	1880.	1879.	Inc. or Dec.	P. c.
N. Y. Cent. & Hudson River.....	2,317,231	2,210,304	I.	106,927 4.8
Northern Pacific.....	56,419	44,658	I.	11,761 26.3
St. L., A. & T. H., Main Line.....	102,064	66,728	I.	35,336 53.0
St. L., A. & T. H., Belleville Line.....	53,830	44,204	I.	9,626 21.8
Scioto Valley.....	20,351	20,008	D.	343 1.7
Wisconsin Central.....	85,171	54,806	I.	30,365 55.6

First week in February:

	1880.	1879.	Inc. or Dec.	P. c.
Chi. & East, Illinois.....	\$22,607	\$18,092	I.	\$4,515 25.0
Cle., Col., Cin. & Ind.....	75,354	96,505	I.	21,151 27.8
St. L., Iron Mt. & So.....	124,830	96,505	I.	28,325 29.3

Week ending March 5:

	1880.	1879.	Inc. or Dec.	P. c.
Great Western.....	\$94,011	\$86,627	I.	\$7,384 8.5

Week ending March 6:

	1880.	1879.	Inc. or Dec.	P. c.
Grand Trunk.....	\$194,708	\$164,694	I.	\$30,014 18.2

Coal Movement.

Coal tonnages reported for the week ending March 6 are as follows:

	1880.	1879.	Decrease	P. c.
Anthracite.....	344,772	490,490	145,718 42.0	21.0
Semi-bituminous.....	50,317	.....	.....	.....
Bituminous, Penna.....	61,992	.....	.....	.....
Coke, Pennsylvania.....	37,552	.....	.....	.....

Anthracite shows a decrease under the system of partial stoppage of production. Prices are higher on account of cold weather and increased demand for other than domestic uses. Semi-bituminous coals are unsettled, under the increase in tolls. The strike of the miners has almost stopped production in the Clearfield Region.

The coal tonnage of the Pennsylvania Railroad for the two months ending Feb. 28 was as follows:

	1880.	1879.	Increase.	P. c.
Anthracite.....	155,413	133,062	22,351 16.8	.....
Semi-bituminous.....	394,119	251,638	142,481 56.6	.....
Bituminous.....	365,956	269,862	96,094 35.6	.....
Coke.....	288,097	229,948	58,149 25.3	.....
Total.....	1,203,585	884,510	319,075 36.1	.....

The increase in all branches is large, in spite of the unsettled condition of things in Western Pennsylvania, on account of strikes.

Crop Prospects.

Reports from the winter wheat crop, extending to nearly all districts where considerable quantities are produced, are generally favorable. In Wisconsin it is said to have been badly winter-killed, but Wisconsin produces spring wheat chiefly. With a good stand on the first of April, winter wheat will have escaped fully half of its dangers, and the prospect of a good yield will therefore be very good. But what will effect the bulk of the crop more is the enormous increase of the area sown, which, in some of the old states, has been estimated to be as much as 50 per cent., and on the average in the winter wheat growing districts is probably 25 to 30 per cent. These are chiefly Ohio, Michigan, Southern and Central Indiana, and Illinois, Missouri and Kansas. Considerable is produced

also in Kentucky and Tennessee, but it is not the leading crop in those states. For three successive years the yield of this grain has been excellent, and the prospect is now good for a fourth great crop.

East-Bound Rates.

The tariff of March 8 gives the following rates from Chicago to New York in cents per 100 lbs., except in Class 9, which is per barrel of 200 lbs. (flour and meal).

CLASS.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
	120	90	70	60	50	45	45	35	70	33	50

Classes 5 and 6 are largely made up from the old fourth-class merchandise. Packed meats are in Class 7, bulk meats in Class 11, grain in bulk (and also coal, coke, pig-iron and iron ore) in Class 8, and lumber in Class 10. The change is chiefly a reduction of 5 cents on the 8th class and 10 cents on the 9th.

THE SCRAP HEAP.

Railroad Equipment Notes.

The Pennsylvania Railroad shops at Altoona are to build 11 heavy passenger engines; 2 anthracite-burning passenger engines; 10 light passenger engines, and 60 consolidation engines for use on the road, and 6 ten-wheel freight engines for the Richmond & Danville road, making 89 locomotives in all.

The Baldwin Locomotive Works, in Philadelphia, are building four consolidation and six ten-wheel freight engines for the Lehigh Valley road. Two of the consolidation engines are to have fire-boxes for burning coal-dust.

The Michigan Car Co., at Detroit, is building 100 Tiffany refrigerator cars, and the Missouri Car & Foundry Co., St. Louis, is also building 50.

The Allegheny Valley shops at Verona, near Pittsburgh, have just completed a work-train, consisting of an office-car, dining-room, kitchen, storehouse and two sleeping cars.

H. K. Porter & Co., Pittsburgh, have orders for 10 locomotives on hand.

The Paterson (N. J.) Press says that the Rogers Locomotive Works in that city have over 100 engines to build, and every part of the shops is busy.

The Grant Locomotive Works in Paterson have several engines to build. It is reported that they have secured a large order from the Atlantic & Great Western.

The Litchfield Car Co., at Litchfield, Ill., has taken a contract for a number of freight cars for the Little Rock, Mississippi River & Texas road.

The Mason Machine Works, at Taunton, Mass., have shipped two locomotives to the Little Rock, Mississippi River & Texas road.

The LaFayette (Ind.) Car Works are building 20 cars a week, and expect to make 25 a week soon.

Iron and Manufacturing Notes.

The Pittsburgh Locomotive Works are making for the Edgar Thomson Steel Works six steel boilers, each 65 ft. long.

Fisher & Norris, at Trenton, N. J., are running a full force full time on anvils, vises, and the Fisher rail-joint.

The National Tube Works at McKeesport are rolling, on a Lath's universal mill, plates 42 in. wide by 60 ft. long, without shearing.—Pittsburgh Manufacturer.

The Indianapolis Rolling Mill is re-rolling iron rails for the Ft. Wayne, Muncie & Cincinnati, and several other roads.

The Trenton Iron Co., at Trenton, N. J., employs 450 men and turns out 300 tons a week of bar-iron, bar-steel, wire-rod and wire.

The E. & G. Brooke Iron Co., of Birdsboro, Pa., has started up its Old Hampton furnace, using charcoal as fuel.

The Elba Bolt & Iron Co., Pittsburgh, is putting up a new 16-in. train of rolls, with a new engine to work it.

The Ohio Falls Iron Works, at New Albany, Ind., with one 16-in. and one 8-in. train of rolls, 15 puddling and 3 heating furnaces, turned out 758 tons of finished iron in February.

property adjoining the works and owned by the company, but used for other purposes. The blacksmith shop will be built upon this property, the old blacksmith shop added to the erecting shop, and a fire-proof building put up for offices and drawing-room.

Not Down on the Invoice.

A few days ago Frank Moulton & Co. shipped a car load of corn to a firm in Selma, Ala. They were advised yesterday that "car No. —" of corn consigned to them came all right, and tightly sealed. In addition to the corn they found a live goat, not down in the bill of lading, in good order, and have asked for information as to what disposition should be made of him. Messrs. Moulton & Co. are equally surprised, and can only account for the strange consignment by the fact that the animal stole into the car as a tramp in disguise.—*Nashville (Tenn.) American.*

Reducing his Account.

Conductor Billy Hibler, of the Central Railroad, is the terror of his companions, on account of his proclivity for practical joking. A few days ago he had a dispute with John Marthaler, keeper of the ferry restaurant, the latter claiming that Hibler owed him thirty cents for sundry cuts of pie. Hibler disputed the bill. A large refrigerator, having a glass front, stands in the restaurant, and into this Marthaler was enticed, on some plausible pretext, by the conductor, who quickly locked the door on his creditor, and then wheeled the refrigerator into the middle of the room. Marthaler was kept in confinement until, in the presence of witnesses, he threw off a sufficient amount of the bill to make it agree with Hibler's figures.—*Jersey City Journal.*

The Hall Signal Company.

The Hall Railway Signal Co., of Meriden, Conn., has increased its capital stock to \$175,000, the new stock being taken by citizens of Meriden and Hartford. At a recent meeting of the stockholders, the following officers were chosen: President, H. D. Bassett; General Manager, Thomas S. Hall; Secretary and Treasurer, D. F. Towner; Directors, Owen B. Arnold, George R. Curtis, Lemuel J. Curtis, Charles Parker. The new capital will be used in extending the company's facilities for supplying railroads with signal apparatus.

Decision on an Injector Patent.

March 10, 1880, Judge Wheeler, of the United States Circuit Court for the Southern District of New York, rendered a decision in a case in which Nathan & Dreyfus, proprietors of James Gresham's patent (No. 57,057) for "a supplementary jet-lifting apparatus for injectors," sued the New York Elevated Railroad and Wm. L. Chase for an infringement of that patent. The injector which they claimed to be an infringement was that known as the "Little Giant Injector," made and sold by the La Rue Manufacturing Co., of Philadelphia. This suit was brought in 1876. The court sustained the validity of the Gresham patent, found that the "Little Giant" injectors complained of were an infringement of that patent, and granted an injunction and referred the subject for an accounting of the damages. Nathan & Dreyfus now give notice that lifting injectors of this pattern are infringements of their patent, and announce that they will settle for such infringements on reasonable terms with all users who respond promptly, and without litigation.

Cat Traffic.

One of the Towne brothers, of railroad reputation, has left railroading to keep the railroad hotel at Harvard, Ill. Expecting a crowd last month, he wrote his friend Pierce at Watertown, asking the loan of some cats for this occasion. For cats Pierce read cats, and the following correspondence ensued:

TOWNE TO PIERCE.

"HARVARD, Ill., Jan. 28, 1880.

"Have you any cats to loan me for Feb. 10, 11 and 12, and how many can you spare?"

TOWNE.

PIERCE TO TOWNE.

"WATERTOWN, Ill., Jan. 29, 1880.

"Towne: I send you to-day all the cats I have on hand. Have several boys out picking up some more. I also send you a 'yaller dorg'; perhaps he will take the place of four or five cats. What in the name of hotels do you want of so many cats? If this thing should become generally known, it will ruin your business. Cut off mince pie for awhile and let hash rest or you are a ruined hotel man.

"N. W. PIERCE."

Before he got through with it Towne had 120 cats unloaded on him, and now he has four coverlids on all his beds.

OLD AND NEW ROADS.

Atlantic & Great Western.—The purchasers of this road at foreclosure sale met in Cleveland, O., March 15, and organized the New York, Pennsylvania & Ohio Railroad Company. The necessary certificates were prepared and filed, the incorporators being J. M. Adams, J. H. Devereux, Henry B. Payne, R. P. Ranney and J. H. Wade. An organization in Pennsylvania also is necessary; the company formed in that state will be consolidated with the Ohio corporation as soon as the necessary formalities can be gone through.

Baltimore & Ohio.—At the regular monthly meeting of the board in Baltimore, March 11, President Garrett stated that the hostile and unreasonable legislation adopted at a previous session of the Legislature of Virginia in regard to the Valley Railroad, which looked to the confiscation of the investments of the city of Baltimore and the Baltimore & Ohio Railroad Company of upward of \$2,000,000, had been, by votes nearly unanimous, in the Senate and House of Delegates of that state, unconditionally repealed. He further stated that as the Valley Company is now no longer embarrassed by the antagonisms which had so much injured its prospects and progress, he hoped that at no distant day arrangements would be made to resume the construction of this road as originally designed. It is understood, in view especially of developments of large and valuable ore-deposits upon the proposed route, that plans are being considered under which the completion of this important work can be accomplished. President Garrett also stated that in order to increase the shipments of grain a reduction of about 15 per cent. in the rates of transportation had been made, and that this traffic had again become heavy.

The board approved and adopted an advance of 50 cents per ton of 2,000 lbs. on bituminous and semi-bituminous coals. The low rates of the summer had been continued during the winter months. Similar advances, and in some cases much larger advances, as compared with the preceding year, in the tariffs on anthracite coal, and coal from the Clearfield and gas-coal regions of Pennsylvania, had also been made.

Upon the subject of wages of the employees of the company, President Garrett recommended an increase on and from April 1 next, looking to a restoration generally of the rates paid prior to July, 1877. This recommendation was approved by the board, and the action proposed will be adopted accordingly.

The board was informed that the plan for the Relief Asso-

ciation for the benefit of the employees of the Baltimore & Ohio Company had been so far prepared by the Third Vice-President as to be ready for submission. The most desirable features in the plans adopted by the leading railway companies in Great Britain, France and other countries for the organization of accident and life insurance societies have been embraced in the system proposed. The President recommended to the board that an appropriation of the sum of \$100,000 should be made, on which an interest of 6 per cent., equivalent to \$6,000 per year, should be guaranteed by the company as part of the basis and capital of the fund, and that the company also give the services of its staff in conducting the clerical and other business necessary for its management, office-room, etc., without cost to the subscribers to the relief association. The suggestion that the proposition and plan be referred to the committee on finance, with power, so that as soon as the details could be properly perfected the association may be organized and placed in operation, was unanimously adopted.

Boston & Albany.—A dispatch from Boston, March 16, says: "As a result of the recent investigation by the Railroad Commissioners into the charges of a discrimination in freight rates made against the Boston & Albany Railroad Company, the board has rendered a decision fully sustaining the allegations of the petitioners. The charges were that the company has been extending to one firm at Wilbraham facilities for transportation which no other persons in the same business were conceded. The Commissioners came to the conclusion that such a proceeding was in violation of the laws of this state, and the whole subject has been referred to the Legislature. The report is important, as affecting the interest of shippers from all parts of the West and South, and will probably result in the destruction of a rapidly growing monopoly by the New England grain trade."

Boston & Albany and Boston & Providence Consolidation.—The proposed consolidation of these two companies fails for this year at least. The Railroad Committee has reported unfavorably on the bill authorizing the consolidation; the Massachusetts Legislature accepts the report, and "leave to withdraw" is granted to the petitioners for the bill.

Boston, Concord & Montreal.—This company expects to profit next season by the failure of the ice crop around Boston. The ice-dealers there are generally looking to Maine and New Hampshire for their supply, and a contract has been made with the Boston Ice Company to ship 300 tons a day from East Tilton, N. H., over this road, which will form a very comfortable addition to its usual freight traffic.

Central Branch, Union Pacific.—It is announced that this company is to be consolidated with the Union Pacific and worked as a branch of the Kansas Division. The line is to be extended along the South Branch of the Solomon to a connection with the Kansas Pacific.

Chesapeake & Ohio Canal.—In the suit of D. K. Stewart, a supplementary petition has been filed in the United States Circuit Court asking for the appointment of a receiver. Petitioners represent that the directors have bought wharf property at Cumberland, the outlet locks at Georgetown and other property, and are paying for the same out of the earnings of the canal, which rightfully belong to the bondholders. They therefore ask that the Court appoint a receiver, without waiting for the hearing in the main suit. The Court set March 25 for hearing argument on the petition.

Chicago & Northwestern.—It is announced that this company will this season build several new branches and extensions, making in all about 265 miles of new road. The greater portion of the new line will be constructed in Dakota. The company has also ordered 800 new cars to be used for transporting iron ore from the Lake Superior mines.

Chicago & Pacific.—In Chicago, March 11, the Master reported to the United States Circuit Court that the purchasers at the foreclosure sale on March 1, 1879, had made payments as follows: At the time of sale, \$60,000 cash; under the order of Dec. 22, 1879, the sum of \$200,000 cash, and 1,460 bonds of \$1,000 each at 22 cents on the dollar, being the amount of dividend on bonds as fixed by the Court, equivalent to \$321,200; under order of Feb. 11, 1880, the sum of \$250,900 in cash and \$84,000 in receiver's certificates, the whole amounting to \$916,100, the price at which the road was sold.

The Court then entered an order receiving the report and directing the Master to execute and deliver to John I. Blair, W. B. Cutting and E. F. Hatfield, Jr., the purchasers, a certificate of purchase and to record the same, as required by law. Also to return the 1,460 bonds, after indorsing upon them the payment of the dividend of 22 cents.

Chicago & Western.—This company has filed articles of incorporation to build a railroad from Chicago to Aurora, about 40 miles. The exact route is not specified. The capital stock is to be \$1,000,000.

Chicago & Western Indiana.—The completion of this road is delayed by trouble about crossing the right of way of the Rock Island and Lake Shore roads at Clark street in Chicago. An attempt was made last week to lay the track, but it was not successful.

Cincinnati, Hamilton & Dayton.—It is reported that parties interested in the Cleveland, Columbus, Cincinnati & Indianapolis have been buying largely of the stock of this company, and are trying to secure a controlling interest. The two roads are in active competition both for Cincinnati and Indianapolis business.

Cincinnati, Indianapolis, St. Louis & Chicago.—The deed transferring the Indianapolis, Cincinnati & LaFayette road to this new company has been duly executed and filed for record. The company has also recorded a mortgage for \$7,500,000, to secure bonds to be issued in accordance with the plan of reorganization.

Cleveland, Tuscarawas Valley & Wheeling.—The grading and bridging of the extension from Uhrichsville, O., to the Ohio River at Bridgeport, opposite Wheeling, is now nearly completed. Track is laid from Uhrichsville south by east 48 miles, leaving only nine miles to reach Bridgeport. The company hopes to have trains running through before May.

Clinton & Port Hudson.—This road has been sold to Messrs. Norwood & Richards. It now extends from the Mississippi, at Port Hudson, La., northwest 23 miles to Clinton, and was built nearly 40 years ago. The purchasers purpose extending it from Clinton northwest to Liberty, Miss., about 25 miles.

Cumberland & Pennsylvania.—The train-men on this road struck on March 15, demanding a considerable increase in wages. The company offered an increase of 10 per cent., which was accepted by the men running between Cumberland and Frostburg, but those running between Frostburg and Piedmont, where all the heavy coal shipments are received, refused, and still hold out. Besides the increase in pay they ask that 10 hours be made a day's work.

Denver & Rio Grande.—Tracklaying is now in prog-

ress on the extension from Alamosa, Col., southward to Conejos, 30 miles. At Conejos the line will divide, the western branch running westward 160 miles to Animas City, and thence northward 42 miles to Silverton, taking the road to the San Juan mining region. Conejos is 282 miles from Denver, so that the line from Denver to Silverton will be 484 miles. The Southern Division will run from Conejos southward on the east side of the Rio Grande to San Juan, N. M., about 107 miles. If the pending agreement with the Atchison, Topeka & Santa Fe is carried out, San Juan will remain the terminus of this division; if the agreement falls through, the road will probably be built through to Albuquerque, 80 miles beyond San Juan.

Dorchester & Delaware.—Traffic on this road was stopped last week by a strike of the train men, who refused to work longer, unless they were paid back wages due them. The matter was finally arranged and work resumed.

Evansville & Peoria.—This company has been organized in Indiana to build a railroad from Evansville northwest to the Wabash River opposite Grayville, Ill. It is intended to be part of the Peoria, Decatur & Evansville road. The company has asked the city of Evansville to subscribe \$200,000, of which \$50,000 is to be spent building shops in that city.

Flint & Pere Marquette.—The trustees, under the land-grant mortgage, announce that they have drawn 160 of the outstanding 8 per cent bonds for redemption under the terms of the mortgage, and that they will be redeemed on presentation to the trustees at New Bedford, Mass. The bonds drawn are of the issue of September, 1868, and interest upon them will cease Aug. 1 next. The numbers drawn are: 4, 7, 15, 16, 58, 60, 61, 70, 72, 78, 85, 90, 106, 107, 108, 109, 110, 118, 120, 131, 138, 148, 153, 163, 165, 169, 177, 191, 198, 216, 223, 229, 231, 235, 237, 241, 245, 252, 257, 258, 260, 262, 263, 284, 288, 289, 294, 295, 297, 298, 303, 305, 306, 308, 313, 315, 320, 321, 322, 340, 342, 348, 363, 394, 397, 398, 399, 401, 404, 407, 421, 444, 446, 458, 459, 464, 465, 512, 515, 534, 548, 554, 558, 564, 566, 574, 576, 578, 583, 596, 601, 603, 609, 619, 641, 643, 645, 650, 655, 681, 778, 796, 805, 829, 838, 839, 849, 852, 860, 870, 871, 874, 877, 888, 896, 899, 909, 919, 929, 935, 937, 947, 971, 989, 990, 1057, 1058, 1059, 1076, 1077, 1093, 1094, 1096, 1099, 1110, 1155, 1159, 1179, 1181, 1191, 1314, 1328, 1512, 1518, 1539, 1587, 1593, 1613, 1624, 1636, 1671, 1673, 1678, 1679, 1680, 1681, 1711, 1725, 1735, and 1755.

George's Creek & Cumberland.—Work on this road is now delayed by a strike of the laborers, who are employed by the contractors. It is said that they will probably be discharged and their places filled by colored men from Virginia.

Illinois Central.—This company's statement for February shows the earnings of all lines worked, as follows:

	1880.	1879.	Increase.	P. c.
In Illinois.....	\$462,673.00	\$368,567.57	\$94,105.43	25.5
In Iowa, leased lines.	120,138.00	98,353.57	21,784.43	22.1

Total..... \$582,811.00 \$466,921.14 \$115,889.86 24.8

During February, 1880, the land sales were \$3,824.96 acres for \$22,192.59, and the cash collected on land contracts was \$14,717.26.

Illinois Midland.—The Court has instructed the Receiver of this road to take freight from Peoria as it can be had, without regarding the restrictions of the existing pool there. The Receiver has recently bought 200 new cars, for which he could not find use under existing conditions. It is not likely, however, that the other roads will let him get more than his share of the freight, though it will be easy enough to get less money for it.

Indiana & Chicago.—This company, whose organization was noted last week, has bought the Indianapolis, Delphi & Chicago road, now in operation from Rensselaer, Ind., to Delphi, 38½ miles. This line is to be changed from 3 feet to standard gauge and will be used part of it as a branch and part as a section of the main line of the new road.

Indianapolis, Cincinnati & LaFayette.—The following circular has been issued:

"On the 2d day of February, 1880, the Indianapolis, Cincinnati & LaFayette Railroad was sold at foreclosure sale, and was purchased by a committee in the interest of bondholders, which sale has been confirmed, and a new company organized. By order of the courts the property has been transferred to said Cincinnati, Indianapolis, St. Louis & Chicago Railway Company, such transfer to date from March 1, 1880.

"From and after that date all accounts should be kept in the name of 'The Cincinnati, Indianapolis, St. Louis & Chicago Railway Company,' and settlement for balances made with E. F. Osborn, Treasurer, Cincinnati, O. Mileage reports to be forwarded to same address.

"Freight and ticket reports to be sent to A. Wipper, Freight and Ticket Clerk, Cincinnati, O.

"All heads of departments and employees are continued in the service of the new company, with same duties and titles, except Mr. J. W. Sherwood, who will assume the title of Superintendent instead of Master of Transportation.

"An early settlement is desired of claims and balances with M. E. Ingalls, Receiver of the Indianapolis, Cincinnati & LaFayette Railroad, for business prior to March 1, 1880. Please remit, or authorize draft for amount due him, and forward statements of any claims against him as such Receiver at your earliest convenience."

International & Great Northern.—At the special meeting of stockholders in Palestine, Tex., March 8, resolutions were unanimously adopted approving the action of the directors at the meeting held in October last, and the action of the stockholders at the meetings held on Nov. 3 and 17 last, thus ratifying the act of sale to the present company.

Delegates from Jefferson were present, urging an extension of the road to that place and presented resolutions from the cotton exchange and cotton merchants to show the many advantages of such construction. They were received with courtesy, but returned home without assurances that their mission will be successful.

James River & Kanawha Canal.—This company issued the following circular to its officers and employees, March 5:

"By a deed executed on the 4th day of March, 1880, this company has conveyed all of its works, property, and franchises to the Richmond & Allegheny Railroad Company, and said Company has entered into possession, control and management of the same.

"Your future instructions will be received from the officers of that company, and be obeyed accordingly."

Janesville, Beloit & Rockford.—This company has been organized to build a road from Janesville, Wis., south to Beloit, 14 miles. It is in the interest of the Chicago, Milwaukee & St. Paul, with whose Racine & Southwestern Division it will connect at Beloit.

Kansas City Union Transit.—This company has been organized for the purpose of doing all the switching of the

railroads entering Kansas City, Mo., and handling and distributing all the freight at that point.

Lake Erie & Shenango Valley.—The survey of this road from Conneaut, O., to Vernon Centre, in Trumbull County, was completed March 3. The road will connect at Vernon Centre with the line of the Sharpville & Lake Shore Railroad, and the two roads will form a continuous line from Sharpville to Conneaut Harbor. The length of the entire line is 56½ miles. The heaviest gradient going toward the lake is 30 feet per mile, and coming from the lake 40 feet per mile. Of the line from Conneaut Harbor to Vernon (45 miles), 90 per cent. is straight, while the curves are very light. Of the line from Vernon to Sharpville (11½ miles), over 70 per cent. is straight line. While there will be some quite heavy work in the vicinity of the crossing of Ashtabula Creek, in Sheffield township, the average amount of grading per mile for the whole line will be small. The engineers are now busy in preparing maps and estimates in preparation for putting the road under contract.

Little Rock, Mississippi River & Texas.—Work is to be pushed on the extension of this company's Texas Division from its present terminus at Monticello, Ark., to Texarkana, about 140 miles. The company has ordered 4,000 tons of rails and the necessary fastenings; also two locomotives and a number of freight cars, and has asked for bids for six more locomotives and 10 passenger cars.

Louisiana Western.—Track on this road is now laid from Lake Charles eastward to the Lacassine Bayou, 24½ miles, and the bridge over that stream is finished. From Orange eastward the track has been laid through the Sabine Swamp, and the end is within ten miles of the track laid from Lake Charles westward, and 18 miles from Orange, Tex., the western end of the road.

Marietta & Cincinnati.—The Receiver gives notice that after April 1 all employees of this road will be paid at the rates prevailing before the reduction of 10 per cent. was made in July, 1877.

Marietta, Pittsburgh & Cleveland.—This road was bought at foreclosure sale in June, 1877, by Cyrus W. Field, John Paton, and Isaac Morton as trustees, representing holders of \$3,083,000 of the company's bonds, the total amount of which was \$3,500,000. It has since been worked by the Purchasing Trustees for the benefit of the bondholders uniting in the purchase, and subject to their orders. A majority in interest of the bondholders have now directed the Trustees to transfer the road to a new organization, known as the Cleveland & Marietta Company, which will issue to the owners its stock in exchange for their bonds. Trustees Field and Paton have therefore filed a bill in the United States Circuit Court, asking that they may be authorized to make the transfer, subject to any debts due by the trust estate, and that the amount of such debts may be ascertained and fixed by the Court, and the accounts of the trust audited. Mr. Norton declines to join in the application, and is accordingly made a defendant in the suit.

The road extends from Marietta, O., to Canal Dover, 101½ miles. The intention is to connect with the Valley Railroad by building from Canal Dover to Canton, about 24 miles, making a north and south line from Marietta to Cleveland, about 184 miles more.

Massachusetts Central.—A meeting of stockholders was held in Boston, March 13, to consider the proposed lease of the road to the Boston & Lowell Company. President Boutwell announced that the agreement was not yet quite complete, and the meeting adjourned until March 25. It is understood that the lease is to take effect as soon as the road is finished, and that the rental is to be a percentage of the gross earnings, the Lowell Company to deduct a certain amount for terminal charges before computing the rental.

Memphis, Carthage & Northwestern.—It will be remembered that some time ago this company's property was sold under foreclosure, and the purchasers organized the Missouri & Western Company, which has since been consolidated with the St. Louis & San Francisco. Some stockholders and creditors of the old company have now filed a bill in equity, asking to have the affairs of the old company wound up and a full accounting had, and that a receiver be appointed for that purpose.

Minneapolis & St. Louis.—Iron has been bought and all preparations made to resume work on the extension from Forest City, Ia., to Ft. Dodge, as soon as the weather will permit.

Missouri, Iowa & Nebraska.—This company has let the contract for grading an extension of 30 miles, from Corydon, Ia., westward to C. H. Mellon & Co., of Keokuk, Ia. Also the contract for grading a branch from Centerville to Albion, 27 miles, to Kennedy & Co., of Des Moines. Both contracts are to be completed by July 1.

It is said that arrangements have been completed for the sale of the road to the Wabash, St. Louis & Pacific, and that the transfer will be made through the foreclosure of the present mortgage on the road.

Missouri Pacific.—In St. Louis, March 13, the United States Circuit Court gave a decision in the suit brought by the United States to recover \$135,000 internal revenue taxes, falling due between 1864 and 1871. The Court decided in favor of the company, holding that, as no assessment or demand had been made at the time, or until 1877, when the property had passed into other hands, no lien could be established as against the present company.

Nashville, Chattanooga & St. Louis.—The New York Times of March 16 says:

"Previous to the purchase of the Nashville & Chattanooga Railroad by the Louisville & Nashville Company, and while secret negotiations to that end were pending, President Cole heard of what was going on, and among the other measures which he took, unsuccessfully, to defeat it was to telegraph his information to certain brokers in this city, and ask their assistance. The latter, seeing what they supposed to be an opportunity for a good thing, formed a pool and succeeded in purchasing 88,000 shares of the capital stock of the Nashville & Chattanooga Company, of a par value of \$25 each, out of the 260,000 shares outstanding. They paid between 80 and 90 per cent. They then supposed that they held the balance of power, and were in a position to name terms to either party. President Cole, however, had had no inkling of the sources upon which the Louisville & Nashville people proposed to draw, and as the pool were dependent upon him for their points, they were equally as surprised as he was when it was announced in the Times that Messrs. Newcomb and Standford had bought from the Messrs. Stevenson and their colleagues 140,000 shares of the stock of the Nashville & Chattanooga Company, thus placing them in full control of the road. There was nothing for it but to 'make a market' for the 88,000 shares and get out of their predicament by saddling the stock upon the public at a profit if possible. As the Louisville & Nashville Company's stock was locked up in escrow in the Continental Bank, and there were but 32,000 shares 'floating,' the majority of it widely scattered, it was a comparatively easy task to mark the price up as high as they chose, with the aid of reports

more or less seemingly probable and industriously spread, but all of which proved, on investigation, to have had no foundation in fact. One of these was that the two roads were to be consolidated, and new stock issued share for share, Louisville & Nashville being far above par. Another was that a scrip dividend, equal to 100 per cent., was to be declared on both roads. Numerous reports were based upon Col. Cole's alleged hostility to the new management, and the supposed difficulties in regard to the lease of the Georgia Central Railroad. The latest story was about the Louisville & Nashville Company buying the Ohio & Mississippi Road, and a supplementary speculation in the stock of the latter company was started to retrieve some of the losses in Nashville & Chattanooga. The pool being practically the only lenders of Nashville & Chattanooga stock, they were able to keep posted as to the outsiders who were dealing in it, and in this way they were enabled to work off a good many shares. On the other hand, however, the true inwardness of the movement having leaked out, they were compelled, from time to time, to take back considerable blocks at advanced prices, in order to sustain the market, by speculators who knew when to stop. One man dumped upon them 4,000 shares at 125 that he bought at 100. Last week a comparison of notes showed that every short had covered except a speculator who had sold 2,100 shares, and had 16,000 shares of long stock on his hands. The game was consequently 'played out.' In all, the pool had succeeded in working off 21,000 shares, but they had sustained a heavy loss in doing so. They had, meanwhile, marked the price up from 92 to 120, and then to 128. On Wednesday last the stock dropped from 124 to 111 at one bound, but subsequently reacted to 115. On Thursday it fell to 98, and on Saturday was as low as 83½. The pool's total losses are estimated at \$200,000. Yesterday morning their brokers, J. W. Amerman & Co., of No. 16 Broad street, notified the Stock Exchange of their inability to meet their engagements. The firm estimate their liabilities at between \$40,000 and \$50,000, but claim that they owe nothing on the Exchange or to the banks. Everything is due to customers, with whom, they assert, they hope to make satisfactory settlements within the next few days."

New River.—Work was begun on this road in West Virginia on Jan. 3, 1880. The line is from New River depot on the Atlantic, Mississippi & Ohio road to the Chesapeake & Ohio at Hinton, W. Va. It is about 70 miles long, 25 miles being in West Virginia and 45 miles in Virginia. Work in Virginia was begun Aug. 9, 1879; convict labor is employed in that state. The road will pass through a country rich in coal, iron ore and lumber.

New York, Albany & Buffalo.—This company has been formed by the consolidation of the New York & Albany and the Buffalo, Syracuse & Albany, and has filed the necessary certificates in New York. Neither company owns any finished road. The projected line is from Jersey City up the west side of the Hudson to Albany and thence west to Buffalo on a line south of the New York Central.

New York, Lake Erie & Western.—This company has begun suit in the New York Supreme Court to recover from James McHenry the sum of \$1,307,287, alleged to have been received by him for the use of the company and retained for his own benefit. Interest from July 8, 1878 is also claimed.

New York, New Haven & Hartford.—The Connecticut Superior Court has refused the application of Mr. H. L. Goodwin, for an injunction to restrain this company from carrying members of the Legislature on free passes.

Northern Pacific.—The track on the Pend d'Oreille Division is now laid for 20 miles eastward from Ainsworth, Oregon, and the grading is finished for 45 miles. Iron for 10 miles more is on hand, and will be laid very soon; no more rails are expected to arrive until about June, when the grading will probably be nearly done and track can be laid as fast as the iron is received.

Oakdale.—The grading of this road is now nearly finished from Oakdale Furnace, in Roane County, Tenn., to Huntsville Station on the Cincinnati Southern, eight miles, and track is laid four miles. The road is narrow-gauge, and is built by the Oakdale Iron Company.

Ohio & Mississippi.—The salaries of all employees of this road are to be restored on April 1 to the rates in force before the 10 per cent. reduction was made in July, 1877.

Philadelphia, Wilmington & Baltimore.—The directors of this company, according to the Philadelphia Ledger, "have decided to build a number of small and light cars to be pulled by small engines, the cars to be kept running at short intervals between Philadelphia and Moore's Station. The equipments of this line are not to be of the cheap order, but in every respect equal to the trains now running on the road. The lightness of the train and its economy as compared with the others will enable the company to make considerable reduction in the cost of travel to passengers. These light trains will take passengers to and from all stations north of Ridley Park, and will run so frequently that it will add greatly to the comfort of those already living out of town, and be a strong inducement for others to seek residences away from the city."

The road has already a large suburban business out of Philadelphia, and the country on its line is well adapted for suburban settlements. The old line from Philadelphia to Chester ran along the river and was not particularly attractive; but the present line, the "Darby Improvement," runs through a fine country and is, moreover, one of the best-built pieces of railroad in the country. The operation of the new plan will be watched with much interest.

It is said that this company will build the projected line from Dover, Del., to Milford. This line is about 20 miles long, parallel to, and generally some 10 miles east of, the main line of the Delaware Division.

The company has issued a circular to its engineers and firemen, offering prizes for the best average mileage to the ton of coal for the three months ending May 31, 1880, the prizes to be equally divided between the engineer and fireman. For the purpose of fair and thorough competition, engines will be divided into seven classes, as follows:

First Class—Engines running through passenger on main line. Premiums, \$30, \$24, and \$18.

Second Class—Engines running Wilmington accommodation and Delaware Division passenger. Premiums, \$24 and \$18.

Third Class—Engines running limited express. Premiums, \$18.

Fourth Class—Engines running Port Deposit Branch and Harrington Branch, Delaware Division. Premium, \$18.

Fifth Class—Engines running Lamokin accommodation trains. Premium, \$18.

Sixth Class—Engines running through freight on main line and Delaware Division. Premiums, \$30, \$27, \$24, \$21, and \$18.

Seventh Class—Engines running way freight and extra freight between Philadelphia and Wilmington. Premiums, \$24 and \$18.

Pittsburgh, Cincinnati & St. Louis.—At the annual

meeting in Columbus, March 16, the stockholders voted to approve a contract under which the use of a part of the Cincinnati & Muskingum Valley road is leased to the Ohio Central (late Columbus & Sunday Creek) Company.

Notice has been given that on April 1 the wages of employees will be restored to the rates in force before the reduction of July, 1877.

Quebec Central.—Track on this road is now laid to Sacre Coeur, in Beauce County, P. Q., 12 miles beyond the late terminus at Coleraine, and 70 miles northeast from the junction with the Grand Trunk at Sherbrooke. Grading is in progress to St. Joseph on the Chaudiere, about 20 miles beyond the present terminus.

Richmond & Allegheny.—The following circular has been issued by this company:

"This company has entered into possession and assumed the control and management of all the works, property, and franchises heretofore owned by the James River & Kanawha Company."

"Directions and instructions for the management of the property aforesaid will be issued by the officers of this company."

The company has let the contract for the completion of the 40 miles of road from Buchanan, Va., to Clifton Forge to Mason, Shanahan & Hoge, the grading to be all done by July 1 next. A complete survey of the canal from Richmond to Buchanan is to be made, in preparation for the building of the railroad along its line.

St. Louis, Iron Mountain & Southern.—The trustees in whom was vested the title and voting power of a large part of the stock of this company, under the agreement of Nov. 27, 1878, give notice that the time has arrived when, in their judgment, the said stock trust should terminate. They therefore intend to transfer the stock to the Farmers' Loan & Trust Company for distribution to the original holders, as soon as the period required by the agreement for publication of the notice has expired.

St. Paul & Sioux City.—A contract has been let to P. J. Kniss, of Laverne, Minn., to grade an extension of the Worthington & Sioux Falls Branch from Sioux Falls, Dak., westward to the Vermillion, about 40 miles. Large quantities of material for the extension are being forwarded from St. Paul.

Selma, Rome & Dalton.—Arrangements are in progress for completing the reorganization of this road. The Receiver states that the gross earnings in 1879 were about \$120,000 more than in the preceding year.

Holders of stocks and bonds in this road are invited to unite in a scheme for the purchase of the road and franchises under the foreclosure proceedings, and reorganization of the same, subject to the following provisions:

1. Holders of the first-mortgage bonds shall surrender their bonds, and receive therefor a new first-mortgage bond at 50 per cent of principal and unpaid coupons of old bond.

2. Holders of the second-mortgage bonds shall surrender their bonds, and receive therefor a new second-mortgage bond for 50 per cent. of principal and unpaid coupons of old second-mortgage bonds.

3. Holders of income bonds shall receive 25 per cent. in preferred, and 25 per cent. in common stock of new organization, without interest.

4. Stockholders in the present road shall relinquish their shares, and receive therefor 75 per cent. in common stock of new organization.

5. Holders of liens judicially determined as prior to first-mortgage bonds, and not from their nature payable in cash out of the proceeds of sale, to be admitted on equality with the first mortgage bonds.

6. All classes of obligations above specified to be assessed ratably, for necessary expenses attending the reorganization, and at the proper time a committee of two from each class so represented to be appointed for the determination of all minor questions, as the same may arise.

Assents to the above will now be received, binding only when a majority interest in each class shall be obtained, and not restricting the party from buying or selling the said securities meantime, the obligations attaching only to the securities actually held by them at the time the list is finally closed, and non-assenting parties shut out from the combination.

Printed forms of assent may be had on application to C. F. Timpson, Chairman of Committee, at No. 54 Broadway, New York.

Somerset & Cambria.—Proposals have been called for on the grading and masonry of this road, which is an extension of the old Somerset road from Somerset, Pa., to Johnstown. The distance is 36 miles, and the whole line will be 45 miles long, from Rockwood, on the Pittsburgh Division of the Baltimore & Ohio, to Johnstown. Though nominally a separate organization, the road is owned by the Baltimore & Ohio, and the chief object of the extension is to reach the large iron works at Johnstown, and secure a part of their business. It will also pass through a district rich in coal, iron-ore, and limestone, and will enable the Baltimore & Ohio to secure a traffic in iron-ore from West Virginia, which is expected to be considerable.

Southern Minnesota.—It is again reported that negotiations are in progress for the transfer of this road to the Chicago, Milwaukee & St. Paul Company.

Southern Pacific.—Track on this road has now reached the ancient Spanish town of Tucson in Arizona, the first train running to that place on March 17. Tucson is 93 miles southeast from the summer terminus at Casa Grande, 275 beyond Ft. Yuma, and 1,006 miles from San Francisco. From Casa Grande to Tucson the road follows a general southeast course, but at the latter place it will turn eastward again.

South Mountain.—The Reading (Pa.) Journal says: "The South Mountain Railroad, partially graded from Harrisburg to Hamburg, Berks County, seems to be in a chronic state of being sold. In 1878 it was sold by the Sheriff of Lebanon County to Wm. M. Derr, Esq., who gives notice of his title and intention to reorganize. Several weeks ago it was sold by the Sheriff of Dauphin County to a Mr. Eby, and the sale subsequently set aside by Judge Pearson. On Feb. 21, after several attempts, it was sold by the United States Marshal, at Philadelphia, to J. N. Hutchinson. On last Wednesday, March 10, it was again sold by the Sheriff of Lebanon County on executions in his hands. Wm. M. Derr, Esq., of Lebanon, read a notice claiming that he had bought all that was offered for sale at sheriff's sale at Jonestown, Lebanon County, two years ago. The clerk then read a notice from Col. Gobin, claiming the proceeds of the sale on behalf of the laborers, and at the conclusion of this announcement Mr. J. S. M. McCarrell, of Harrisburg, read a notice for Sheriff Keel, of Dauphin County, claiming to have levied upon the property to be offered for sale before the lien of the levy of the sheriff of Lebanon County, at which time, and consequently asserting and claiming that both levy and sale by the Sheriff, under the writ in Lebanon County, are and would be void. The road was finally knocked down to Joshua M. Weistling, Esq., for the original

organization, under the management of President Bell. The Sheriff of Dauphin County advertised it for sale on Thursday last, the 11th instant, on executions in his hands—but for certain reasons the sale was postponed until the 22d of next April. There are still a number of claims for land damages, etc., pending against the road, so that these sales are likely to go on for some time to come.

Telegraph War.—Under temporary injunctions and other legal proceedings, the Western Union Company has now recovered nearly all the wires seized by the American Union. The Baltimore & Ohio wires are still in litigation.

Twin Valley & Greenville.—This organization proposes to build a narrow-gauge road from Greenville, Darke County, O., southward by Ithaca, West Sonora, Lewisburg, Germantown and New Carlisle to Cincinnati. The distance is about 75 miles.

Warwick Valley.—The Wawayanda Railroad Company, which was organized to build the 7½ miles of the extension of this road in the state of New Jersey, has been consolidated with this company, the agreement having been unanimously ratified by the stockholders of both companies. The old road extended from the Erie at Greycourt, N. Y., to the village of Warwick, 10½ miles; the extension is 11½ miles long, from Warwick to McAfee Valley, N. J., where it connects with the Vernon Extension of the Sussex Railroad. Of the new line 7½ miles is in New Jersey. The consolidated company thus owns a line 22 miles long, from Greycourt to McAfee Valley, completing, with the Sussex Railroad, a line from Greycourt to the Delaware, Lackawanna & Western at Waterloo. The new line passes through an exceedingly beautiful and picturesque country, following one of the finest valleys in the hill country of Northern New Jersey; it touches some valuable iron mines, and will have also a considerable milk traffic, for which three outlets are open—by the Erie from Greycourt, the Delaware, Lackawanna & Western from Waterloo, or the New Jersey Midland from Hamburg.

The stock of the consolidated company is fixed at \$340,000, and the bonded debt at \$210,000, a total of \$550,000, or \$25,000 per mile. The Warwick Valley Company has paid regular dividends for some years.

The extension is now all complete from McAfee Valley to Warwick, the only work remaining to be done being a short connection between the old and new track in the village of Warwick, which is to be finished this week. The company will soon begin work on a branch some four miles long to reach the iron mines of the Thomas Iron Company and others.

Western & Atlantic.—The Atlanta Constitution has positive information that the controlling interest in the Western & Atlantic lease has been sold to the Central Railroad Company, of Georgia. It will be remembered that a controlling interest was bought some time ago by President Cole for the Nashville, Chattanooga & St. Louis, and this, it is understood was held by Colonel Cole and not by the company; it is now transferred to the Central, as represented by President Wadley. All the present officers are to be retained. The possession of the road is not so great an advantage as might be supposed, for, under the terms of the lease, the road is to be open freely to any person or company desiring to send business over it.

Willamette Valley.—Oregon papers state that the entire stock of this company has been sold to the Oregon Railway Company, recently organized. This road is in operation from Dayton, Ore., to Dallas, 27 miles, with a branch 8 miles long to Sheridan. The new company expects to build from Dayton to Portland, about 40 miles.

Wisconsin & Minnesota.—Contracts have been let for the building of this road from Colby, Wis., on the Wisconsin Central, westward to Chippewa Falls, 64 miles, the road to be in running order by Oct. 1. It is built in the interest of the Wisconsin Central, and will be part of the new line from St. Paul eastward across Wisconsin.

Wisconsin Central.—The reorganization of this company has hitherto been delayed by Mr. Theodore Stearn, who holds a large amount of the bonds, and who has had suits pending to prevent the Trustees from taking the necessary action under the plan. Mr. Stearn now gives formal notice that he has sold his bonds and will no longer oppose the completion of the reorganization.

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Quincy, Missouri & Pacific.

This company operated in 1879 a line from West Quincy, Mo., westward to Novinger, 76 miles, being an increase of 8 miles over the preceding year.

The earnings for the year were as follows:

1879.	1878.	Inc. or Dec.	P. c.
Gross earnings..... \$110,591.00	\$90,775.18	I. \$19,815.82	21.5
Expenses..... 72,176.16	69,018.57	I. 3,157.59	4.6
Net earnings..... \$38,414.84	\$21,756.61	I. \$16,658.23	75.0
Gross earn. per mile..... 1,455.14	1,394.93	I. 60.21	9.0
Net "..... 503.46	319.95	I. 183.51	58.0
Per cent. of exps..... 63.20	75.80	D. 12.60	14.0

The increase in freight earnings for the year was \$19,709.68, or 32 per cent.

The road is now being extended from Novinger westward to Milan, and is to be worked by the Wabash, St. Louis & Pacific Company under lease.

The earnings are still very light, in spite of last year's increase. An improvement is hoped for from the extension westward.

Hannibal & St. Joseph.

This company owns the following lines:

Miles.
Main Line, Hannibal, Mo., to St. Joseph..... 206.41
Atchison Extension, St. Joseph to Atchison, Kan..... 19.47
Kansas City & Cameron Branch, Cameron, Mo., to Kansas City..... 53.05
Quincy Branch, Palmyra, Mo., to West Quincy..... 13.42
Total..... 292.35

The report is for the year ending Dec. 31, 1879.

The equipment consists of 78 engines; 30 passenger and 16 baggage and mail cars; 528 box, 520 combination, 89 stock, 176 flat, 216 coal and 31 way cars; 1 directors', 1 paymaster's, 1 derrick and 1 pile-driver car; 58 hand and 61 rubble cars.

The capital and general accounts are given separately.

The account is as follows:

Common stock.....	\$9,168,700.00
Preferred stock.....	5,083,024.00
Total stock (\$48,807 per mile).....	\$14,251,724.00
Bonded debt (\$29,529 per mile).....	8,635,000.00
Total.....	\$22,886,724.00
Cost of road and equipment.....	\$13,575,823.67
Discount and depreciation.....	6,497,639.86
Balance to general account.....	2,811,260.47
Total.....	22,886,724.00

The bonded debt consists of \$3,000,000 Missouri state 6 per cent. bonds; \$4,000,000 convertible 8 per cent. bonds; \$1,200,000 Kansas City & Cameron 10 per cent. bonds, and \$4,683,000 Quincy & Palmyra 8 per cent. bonds. The annual interest charge is \$654,640. The debt was decreased last year by the payment of \$67,000 Quincy & Palmyra bonds which fell due. The above statement does not include the land-grant sinking fund bonds, which are provided for by the Land Department. Of these the authorized issue is \$1,000,000, whereof \$842,000 have been issued and \$158,000 are held by the company. Of those issued \$350,000 have been paid from the sinking fund, leaving \$492,000 outstanding.

The Land Department reports for the year receipts and expenses as follows:

Cash on hand.....	\$15,829.22
Receipts from free lands.....	\$51,019.53
" assigned lands.....	203,692.24
Total.....	\$314,711.77
Expenses and commissions.....	\$46,502.64
Interest on bonds.....	37,510.28
Bonds drawn and paid.....	200,000.00
Free land surplus paid company.....	35,676.84
Total.....	\$319,689.76
Balance, cash, less accounts payable.....	\$10,851.23

The general balance sheet of the department shows a surplus of \$2,555,341.95 to the company. The report says:

"The transactions of the Land Department show greatly-increased activity. A complete revaluation has been made, based upon actual inspection by competent experts. The greater part of the contracts upon which payments were in arrears have been canceled, and the land placed again in the market. A more active demand for land exists than for many more years before, and upon the contracts remaining in force collections are promptly made."

A summary of the income account is as follows:

Net earnings of road.....	\$773,983.69
Receipts from free lands.....	55,078.84
" miscellaneous sources.....	1,513.72
" \$261,000 land-grant bonds sold.....	291,430.63
Total.....	\$1,072,604.28
Interest on bonds.....	\$657,320.00
New construction and equipment.....	139,902.43
St. L., Keokuk & N. W. bonds.....	8,194.36
Sundry accounts.....	3,908.06
Bonds paid off.....	67,000.00
Bills and accounts payable, paid.....	68,679.58
Increase in cash and credit balances.....	127,508.93
Total.....	1,072,604.28

The actual surplus of earnings and free-land receipts over all interest charges was \$153,854.25, which was carried to general account. Chief items of new construction were grading, bridges and cost of steel over iron rails; of equipment, cost of six new mogul engines.

The general account, condensed, is as follows:

Balance from capital account.....	\$2,811,260.47
" revenue account.....	153,854.25
Current accounts and balances, unclaimed coupons, etc.....	250,647.46
January coupons.....	150,000.00
Profit and loss.....	2,630.35
Total.....	\$3,368,392.53
Cash.....	\$220,844.84
Bills and accounts receivable.....	194,084.03
Land-grant bonds on hand.....	158,000.00
Supplies.....	80,041.20
Elevator purchase, etc.....	61,974.13
Bonds and stocks.....	29,655.20
Land Department balance.....	2,555,341.95
Suspended and doubtful accounts.....	62,451.18
Total.....	\$3,368,392.53

During the year a subscription was made of \$35,716.54 for St. Louis, Keokuk & Northwestern bonds at 50. The company also holds 384 shares of that company's stock, not included in assets, as the value is uncertain.

The earnings for the year were as follows:

1879.	1878.	Inc. or Dec.	P. c.
Passengers..... \$506,876.06	\$556,886.88	I. \$9,080.18	1.8
Freight..... 1,247,835.29	1,313,482.43	D. 65,647.14	5.0
Express and mail..... 78,813.17	75,777.31	I. 3,035.86	4.0
Miscellaneous..... 103,881.14	90,303.61	I. 4,577.53	4.6
Total..... \$1,997,405.66	\$2,045,450.23	D. \$48,044.57	2.3
Expenses..... 1,223,421.97	1,226,551.24	D. 3,129.27	0.3
Net earnings..... \$773,983.69	\$818,898.99	D. \$44,915.30	5.5
Gross earn. per mile..... 0,832.24	0,906.60	D. 164.36	2.3
Net earnings per mile..... 2,047.46	2,801.09	D. 153.63	5.5
Per cent. of exps..... 61.25	59.96	I. 1.29	2.2

The General Manager's report says: "Owing to the rupture in the Southwestern Railway Association, caused by the withdrawal of the St. Louis lines, and extending from April 12 until Sept. 15, the rates for carrying freight during this period of five months were very low, and consequently entailed a heavy loss in revenue. The passenger business eastward was also very seriously affected by the same cause. In May the rate per ton per mile on through freight was as low as 0.37 cent, and for the entire year the average was 0.78 cent, against a similar average for 1878 of 1.1. On the tonnage actually handled during the year this difference in rate is equivalent to a loss in revenue of \$288,915. While, with firm rates, the movement of freight might not have been as heavy as was the case, yet, when the injury to the passenger business from the same

cause is considered, it is hardly amiss to place the loss in revenue at from \$250,000 to \$275,000."

The traffic statements are as follows:

1879.	1878.	Inc. or Dec.	P. c.
Train mileage..... 414,118	407,722	I. 6,396	1.5
Passenger..... 938,095	942,428	D. 4,333	0.5
Freight..... 1,352,213	1,350,150	I. 2,063	0.2
Total..... 2,190,243	2,190,100	I. 143	0.006
Car mileage..... 2,190,243	2,190,100	I. 143	0.006
Passenger train..... 15,715,882	15,030,308	I. 685,574	4.6
Freight..... 282,379	257,916	I. 24,463	9.6
Passengers carried..... 21,545,308	19,108,676	I. 2,436,632	12.8
Tons freight car..... 622,553	543,472	I. 79,081	14.6
Tonnage mileage..... 111,987,174	100,012,716	I. 11,974,458	12.0
Av. train load..... 52.0	47.0	I. 5.0	10.6
Passengers, No..... 119.5	106.0	I. 13.5	12.8
Freight, tons..... 119.5	106.0	I. 13.5	12.8
Av. receipt..... 2.640 cts.	2.870 cts.	D. 0.230 ct.	8.0
Per ton per mile..... 1.007 cts.	1.295 cts.	D. 0.288 ct.	22.2

The average cost was: Per passenger-train mile, 100.01 cents; per passenger car mile, 18.91 cents; per passenger per mile, 1.92 cents; per freight-train mile, 86.37 cents; per freight car mile, 5.15 cents; per ton per mile, 0.72 cent. The average car-load for loaded cars was 9.24 tons; for all cars, 7.13 tons.

Of the freight-car mileage, 77.1 per cent. was of loaded cars. Of the tonnage mileage, 70.9 per cent. was of through freight; 39.6 per cent. was of east-bound and 60.4 per cent. of west-bound freight. Chief items of freight were 197,539 tons lumber; 128,032 tons grain and flour; 74,715 tons live-stock, and 72,127 tons coal.

The General Manager's report says: "I think it very desirable that we should have a full supply of steel rails to continue during the present year the improvements in track. I hope you may be able to allow contracts to be made for the same quantity as furnished last year. While this would probably involve a somewhat larger outlay, the increased price of old rails would not make the net increase in cost heavy, and by the improved condition of the track, this would be compensated by the saving in repairs of rolling stock, in cost of running, and in liability to accidents. About the same number of ties will be required this year as last. The coal production on the lines is being largely increased by the enlargement of old and opening of new mines at Bevier, Summit and Lingo, and to meet this we shall probably need an additional number of coal cars. If built, I deem it desirable that they should be of a capacity of twenty tons, as thereby a further reduction in train expenses, in proportion to tonnage moved, can be made."

The President's report says: "There has been no increase of length of road, which is 292.35 miles, but during the year 48 miles of track were laid with new steel rail, making about 177 miles of steel track altogether. About 137,000 ties were put in last year, against 111,000 in 1878. Six Mogul engines have been purchased, and are in use on the Western Division, where, by their use, the average number of loaded freight cars to the train have been increased eight cars."

"At the annual meeting of November, 1879, the stockholders authorized contracts in accordance with terms then submitted to them, granting to the Chicago, Rock Island & Pacific Railroad Company the right to a joint use with us of our road from Cameron Junction to Kansas City for a rental, based upon a fair valuation and the right to use the Kansas City bridge upon an agreed schedule of tolls, substantially the same as that of the Atchison Bridge Company. These contracts have been made. Without any material interference with our business or increase of expense, they will materially increase our income. Contracts are also in negotiation and substantially agreed upon with the Missouri Pacific Railroad for the joint use by it of our track between Atchison and St. Joseph and our terminal facilities at those points, and with the Chicago, Rock Island & Pacific for hauling its freight between Cameron Junction and St. Joseph."

Cleveland, Tuscarawas Valley & Wheeling.

This company, for the year 1879, worked a line from Black River, O., south by east to Ulrichsville, 101 miles. An extension from Ulrichsville to Wheeling, W. Va., 57 miles, is in progress.

The general account is as follows:

Stock.....	\$1,055,950
Bonded debt.....	4,063,746
Unpaid coupons.....	228,900
Bills, accounts, and balances payable.....	58,377
Total.....	\$5,406,973
Road, etc.....	\$4,644,672
Wheeling Extension, real estate, etc.....	680,503
Supplies and cash assets.....	48,545
Income account, balance.....	253
Total.....	\$5,406,973

The bonded debt consists of \$2,000,000 Lake Shore & Tuscarawas Valley first-mortgage bonds; \$180,000 Elyria & Black River first-mortgage bonds; \$579,000 new first-mortgage bonds for Wheeling Extension; \$1,297,000 second-mortgage bonds, and \$7,746 scrip.

The traffic for the year was as follows:

1879.	1878.	Inc. or Dec.	P. c.
Passengers carried..... 132,325	133,617	D. 1,292	0.9
Tons freight carried..... 554,242	543,492	I. 10,750	2.0
Average rate..... 2.67 cts.	2.73 cts.	D. 0.06 ct.	2.2
Per passenger per mile..... 1.17	1.21	D. 0.04 "	3.3

The traffic is chiefly in coal. The earnings for the year were as follows:

1879.	1878.	Inc. or Dec.	P. c.
Passengers..... \$75,431	\$73,187	I. \$2,244	3.1
Freight..... 302,332	301,544	D. 788	0.3
Mails, etc..... 8,982	9,705	D. 723	8.0
Total..... \$446,749	\$474,526	D. \$27,777	5.9
Expenses..... 284,430	345,435	D. 61,005	17.7
Net earnings..... \$162,319	\$129,091	I. \$33,228	25.8
Gross earn. per mile..... 4,423	4,698	D. 275	5.9
Net "..... 1,607	1,278	I. 329	25.8
Per cent. of exps..... 63.65	72.80	D. 9.15	12.6

In order to obtain the money necessary to construct the Wheeling Extension, every bondholder signed an agreement among themselves, and with the company, by which a mortgage securing 700 bonds of \$1,000 each should become a first lien upon the entire railroad and property of the company, which bonds, so secured, were accordingly issued, and have been disposed of at par and accrued interest. Five hundred and seventy-nine bonds have been delivered to purchasers prior to Dec. 31, 1879, and the proceeds applied in payment for construction and for steel rail. Six thousand tons of steel rail, purchased at \$45 per ton in May, have been received and laid on that part of the railroad between Lake Erie and Ulrichsville, and the partly-worn iron rail has been transferred to the Wheeling Extension. The construction of the extension has progressed steadily since the resumption of work, June 1, 1879, and at this date (March 10, 1880), the grading and bridging is nearly completed, and the track is laid, with the exception of nine miles. It is expected the track will be laid and sufficiently ballasted to begin business between Lake Erie and the Ohio River May 1, 1880.